

# Business Practice Manual For Generator Management

Version 8

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## Approval History

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BPM Owner: Deb Le Vine

BPM Owner's Title: Director of Infrastructure Contracts & Management

## Revision History

Version	Date	Description
1	3/4/2014	Create BPM
2	6/27/2014	Changes to incorporate: <ul style="list-style-type: none"> <li>• PRR 730 - Clarifications on Modification Requests Submitted by PTOs, and</li> <li>• PRR 731 - Clarifications on Modification Requests During the Project's Interconnection Studies</li> <li>• Update section 1.1 to be consistent with other BPMs</li> </ul>
3	9/4/2014	Changes to incorporate PRR 744 - Addition of Section 4, Multiple Phases of Generating Facilities and revisions to section 3 to capture the Commercial Operation for Markets ("COM") process
4	9/29/2014	Changes to incorporate: <ul style="list-style-type: none"> <li>• PRR 765 - Annual Generator Downsizing Process and De Minimis Reductions</li> <li>• Changed two references of "ISO" to "CAISO" to be consistent</li> </ul>
5	12/1/2014	Changes to incorporate: <ul style="list-style-type: none"> <li>• PRR 779 - Limited Operation Study procedures</li> <li>• PRR 784 - Generating Unit Repowering Overview and Timeline, Change BPM Name to Generator Management</li> </ul>
6	4/30/2015	Changes to incorporate: <ul style="list-style-type: none"> <li>• PRR 825 inverter changes that result in a capacity increase</li> <li>• Instances of "Queue Management" that should have changed to "Generator Management" in the 12/1/2014 update</li> </ul>

Version	Date	Description
7	6/1/2015	Changes to incorporate: <ul style="list-style-type: none"><li>• PRR 837 Process for generating unit conversions to California ISO Markets</li><li>• Moved Section 4 <i>Multiple Phases of Generating Facilities</i> up in the order of sections (these changes are denoted in green-line, and no changes were made to the content)</li><li>• Created placeholders to avoid frequent re-numbering as the CAISO develops and publishes additional sections</li></ul>
8	6/30/2015	Changes to incorporate: <ul style="list-style-type: none"><li>• PRR 840 Process and requirements for regulatory contracts</li><li>• PRR 841 Process for Retiring a Generating Unit</li></ul>
<u>9</u>	<u>9/4/2015</u>	<u>Changes to incorporate PRR 851 Modify the request window for Limited Operation Studies</u>

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# 1. Introduction

Welcome to the CAISO ***BPM for Generator Management***. In this Introduction you will find the following information:

- The purpose of California Independent System Operator Corporation (CAISO) Business Practice Manuals (BPMs);
- What you can expect from this CAISO BPM; and
- Other CAISO BPMs or documents that provide related or additional information.

## 1.1 Purpose of CAISO Business Practice Manuals

The Business Practice Manuals (BPMs) developed by CAISO are intended to contain implementation detail, consistent with and supported by the CAISO Tariff, including: instructions, rules, procedures, examples, and guidelines for the administration, operation, planning, and accounting requirements of CAISO and the markets. Each Business Practice Manual is posted in the BPM Library at: <http://bpmcm.aiso.com/Pages/BPMLibrary.aspx>

## 1.2 Purpose of This Business Practice Manual

This BPM for Generator Management covers the rules, and procedures for implementation of new generating units interconnecting to the CAISO Controlled Grid. This BPM covers serial, cluster, GIDAP, independent, fast track, and 10KW or less inverter Interconnection Study processes for Large Generating Facilities (LGF) and Small Generating Facilities (SGF). The BPM is intended for those entities that have completed the interconnection study process to interconnect with the CAISO and have executed or are negotiating a Generator Interconnection Agreement (GIA) and may participate in the CAISO Markets, as well as those entities that expect to exchange Power with the CAISO Balancing Authority Area.

This BPM benefits readers who want answers to the following questions:

- What are the roles of CAISO, Participating TOs and the Interconnection Customer during the development of projects?
- What are the concepts that an entity needs to understand to engage in the CAISO's queue management process?

Although this BPM is primarily concerned with management of the CAISO interconnection queue, there is some overlap with other BPMs. Where appropriate, the reader is directed to the other BPMs for additional information.

If a Market Participant detects an inconsistency between BPMs, it should report the inconsistency to CAISO before relying on either provision.

The provisions of this BPM are intended to be consistent with the CAISO Tariff. If the provisions of this BPM nevertheless conflict with the CAISO Tariff, the CAISO is bound to operate in accordance with the CAISO Tariff. Any provision of the CAISO Tariff that may have been summarized or repeated in this BPM is only to aid understanding. Even though every effort will be made by the CAISO to update the information contained in this BPM and to notify Market Participants of changes, it is the responsibility of each Market Participant to ensure that he or she is using the most recent version of this BPM and to comply with all applicable provisions of the CAISO Tariff.

A reference in this BPM to the CAISO Tariff, a given agreement, any other BPM or instrument, is intended to refer to the CAISO Tariff, that agreement, BPM or instrument as modified, amended, supplemented or restated.

The captions and headings in this BPM are intended solely to facilitate reference and not to have any bearing on the meaning of any of the terms and conditions of this BPM.

## **1.3 References**

The definition of acronyms and words beginning with capitalized letters are given in the BPM for Definitions & Acronyms.

Other reference information related to this BPM includes:

- Other CAISO BPMs
- CAISO Tariff

The CAISO Website posts current versions of these documents.

Whenever this BPM refers to the Tariff, a given agreement (such as a GIA), or any other BPM or instrument, the intent is to refer to the Tariff, that agreement, other BPM or instrument as it may have been modified, amended, supplemented or restated from the release date of this Generator Management BPM.

The captions and headings in this BPM intend solely to facilitate reference and not to have any bearing on the meaning of any of the terms and conditions of this BPM.

## **1.4 Definitions**

### **1.4.1 Master Definitions Supplement**

Unless the context otherwise requires, any word or expression defined in the Master Definitions Supplement, Appendix A to the CAISO Tariff, shall have the same meaning where used in this Queue Management BPM. Special Definitions not covered in Appendix A to the CAISO Tariff, used in this BPM are provided in Section 1.4.2 of this BPM.



## 1.4.2 Highlighted Definitions Applicable to This BPM

The definitions of the following terms, which also appear in either CAISO Appendix A, Appendix S, Appendix U, GIP (Appendix Y) or the GIDAP (Appendix DD), are important to keep in mind in reviewing this BPM:

“Cluster Study Process” shall mean a process whereby a group of Interconnection Requests are studied together, instead of serially, for the purpose of conducting Phase I and II Studies.

"Dispute Resolution" shall mean the procedure set forth in the executed interconnection agreement, or Appendix U, Section 13.5; Appendix Y, Section 13.5 and GIP BPM, Section 17; or Appendix DD, Section 15.5 and in GIDAP BPM, Section 15, as applicable for resolution of a dispute between the Parties.

“Material Modification” is defined in CAISO Tariff Appendix A as “modification that has a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date.”

"Party" or "Parties" shall mean the CAISO, Participating TO(s), Interconnection Customer or the applicable combination of the above.

## 2. Generator Management Overview

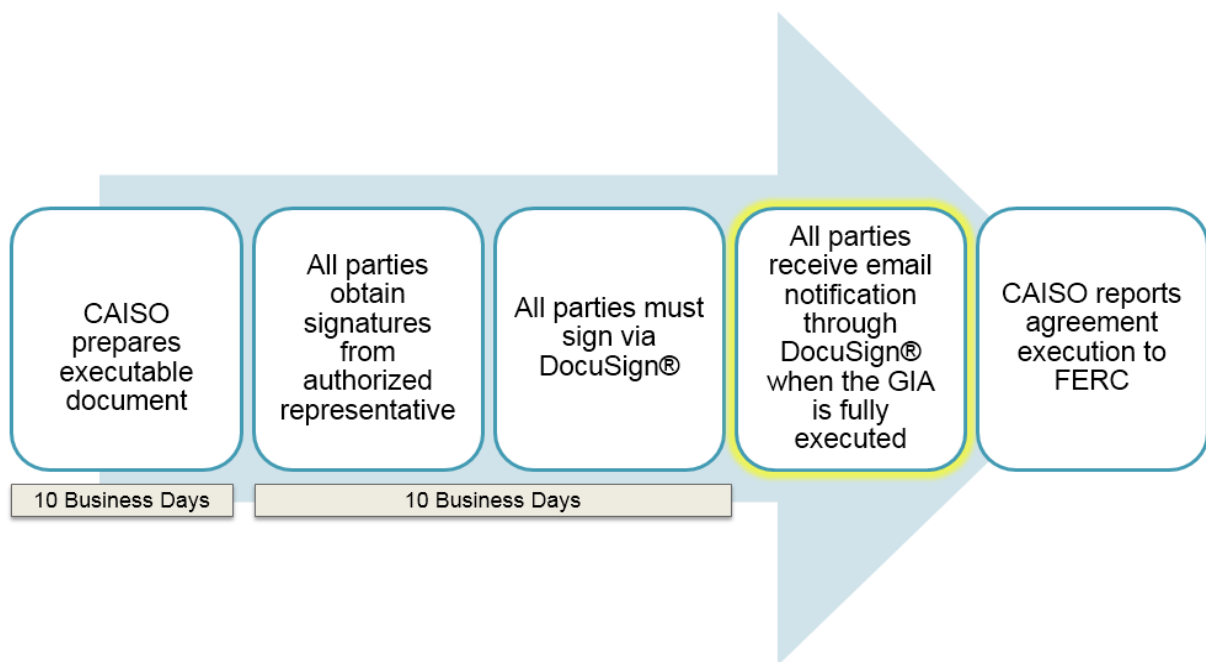
Welcome to the *Overview* section of the CAISO *BPM for Generator Management*. In this section, you will find the following information:

- A high-level description of the material modification process.
- Subsequent sections “drill down” in greater detail. Included in subsequent sections are the following topics:
  - Timing of when project modifications can be requested;
  - Scope of modifications that can be requested; and
  - Deposit requirement and process.

### 3. Regulatory Contracts

The terms of interconnection to the CAISO Controlled Grid and participation in CAISO markets are governed by more than 20 agreements. The body of these agreements generally contain pro-forma language approved by the Federal Energy Regulatory Commission, and the appendices and schedules (as applicable) contain specific customer and project details. A complete list of the CAISO's pro-forma agreements is available on the CAISO public website under Rules> Contracts and Agreements> <http://www.caiso.com/rules/Pages/ContractsAgreements/Default.aspx>. The process and schedule for drafting and developing agreements required for Generating Units connecting to the CAISO Control Grid is described in the sections below.

The process for agreement execution is the same for all conforming pro-forma agreements. When an agreement is released for execution, the CAISO prepares an executable document. The CAISO has established a processing time of ten (10) Business Days for the execution of all conforming pro-forma agreements (and amendments) upon initiation of the execution process. The CAISO prepares the executable document and distributes it for execution via DocuSign®, an electronic signature technology. All parties receive email notification through DocuSign® when the document is fully executed. The CAISO reports the execution of all new agreements, as well as any subsequent assignments, name changes, and/or termination of the agreement to the Federal Energy Regulatory Commission on a quarterly basis through the Electronic Quarterly Report (EQR).<sup>1</sup>

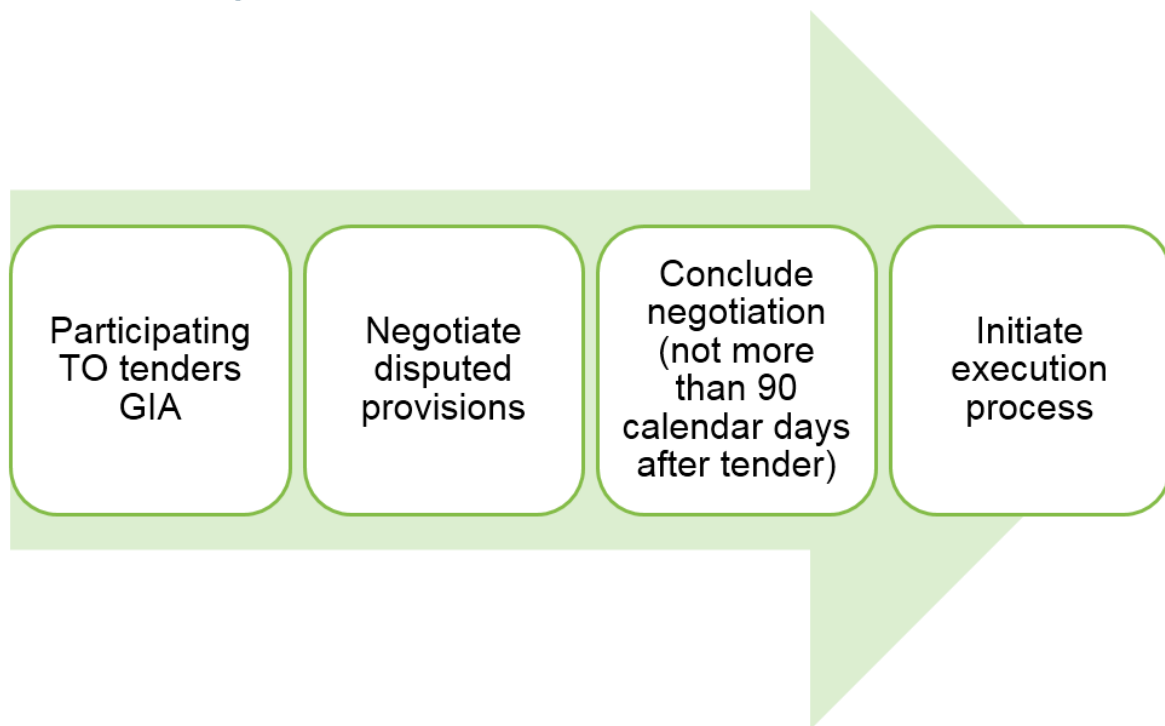


#### 3.1 Generator Interconnection Agreements

Generation Interconnection Agreements (GIAs) are three-party agreements among the Interconnection Customer, the CAISO, and the Participating TO. GIAs provide the terms and conditions for the provision of interconnection service to Interconnection Customer. GIAs are tendered by the Participating TO, and all three

<sup>1</sup> <http://www.ferc.gov/docs-filing/eqr.asp#.VTmHrSHBzRY>.

parties work together to develop the appendices. The development of the appendices is expected to take no more than ninety (90) days. When development is complete and all parties agree, the CAISO initiates the execution process.



### 3.2 Participating Generator Agreements

Participating Generator Agreements (PGA) are agreements between the CAISO and a Participating Generator, a pro forma version of which is set forth in Appendix B.2 of the CAISO Tariff. PGAs may be requested by a Generator or other seller of Energy or Ancillary Services through a Scheduling Coordinator over the CAISO Controlled Grid (1) from a Generating Unit with a rated capacity of 1 MW or greater, (2) from a Generating Unit with a rated capacity of from 500 kW up to 1 MW for which the Generator elects to be a Participating Generator, or (3) from a Generating Unit providing Ancillary Services or submitting Energy Bids through an aggregation arrangement approved by the CAISO, which has undertaken to be bound by the terms of the CAISO Tariff.

To initiate a new PGA, download the Project Details Form from the CAISO Website under <http://www.caiso.com/partici pate/Pages/NewResourceImplementation/Default.aspx> and submit the form to [NRI@caiso.com](mailto:NRI@caiso.com). The guide will provide detailed instructions and critical timelines.

### 3.3 Metered Entity Agreements for CAISO Metered Entities

Metered Entity Agreements for CAISO Metered Entities (MSACAISOME) are two party agreements between the CAISO and a CAISO Metered Entity consistent with the

provisions of Section 10 of the CAISO Tariff. A pro-forma version is set forth in Appendix B.6 of the CAISO Tariff. A Meter Service Agreement for CAISO Metered Entities may be requested by:

- (a) any one of the following entities that is directly connected to the CAISO Controlled Grid:
  - i. a Generator other than a Generator that sells all of its Energy and Ancillary Services to the Utility Distribution Company or Small Utility Distribution Company in whose Service Area it is located;
  - ii. an MSS Operator; or
  - iii. a Utility Distribution Company or Small Utility Distribution Company; and
  
- (b) any one of the following entities:
  - i. a Participating Generator, including a Pseudo-Tie Participating Generator;
  - ii. a Participating TO in relation to its Tie Point Meters with other TOs or Balancing Authority Areas;
  - iii. a Participating Load;
  - iv. a Participating Intermittent Resource; or
  - v. a utility that requests that Unaccounted for Energy for its Service Area be calculated separately, in relation to its meters at points of connection of its Service Area with the systems of other utilities.

To initiate a new MSACAISOME, download the Project Details Form from the CAISO Website under New Resource Implementation Process and Requirements, <http://www.caiso.com/participate/Pages/NewResourceImplementation/Default.aspx> and submit the form to [NRI@caiso.com](mailto:NRI@caiso.com). The guide will provide detailed instructions and critical timelines.

### 3.4 Submitting Requests for Revisions to Existing Contracts

The ten (10) Business Day processing time extends to the completion of all requests related to contract management once the appropriate documentation has been received by the CAISO. Such requests include, but are not limited to schedule revisions, assignments, name changes, project name changes, and change of ownership requests. Failure to submit any of the required documentation as outlined below may result in a delay in processing.

All requests for revisions to existing contracts should be submitted in writing to the CAISO at [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com). To expedite the processing of all requests, please include the following information:

- Agreement holder's name;
- Agreement(s) affected;
- Queue number (if applicable);
- Project name (if applicable);
- Revision requested;
- Requested effective date of revision; and

- Required documents (as outlined).

## 3.5 Assignment

Assignments are generally permitted unless there is an express prohibition against it. Generally such prohibitions are created contractually. Under the CAISO Tariff Section 22.2, any party to a regulatory contract may assign or transfer any or all of its rights and/or obligations under a regulatory contract with the other parties' prior written consent. Moreover, the CAISO Tariff provides that consent should not be unreasonably withheld by the CAISO. Any such transfer or assignment is conditioned upon the successor in interest accepting the rights, conditions, and obligations under the regulatory contract as if the successor in interest was an original party to the regulatory contract, namely, having the operational and financial ability to satisfy the original party's obligations and liabilities. As described below, submittal of a completed CAISO Consent to Assignment form is not required to assign to an affiliate.

### 3.5.1 Assignment to Affiliates

To request an assignment to an affiliate, the following documentation must be submitted to the CAISO prior to the requested effective date of the assignment:

- Written confirmation from the Participating TO that the intended Assignee meets the credit-worthiness requirements to fulfill any financial obligations that may be assumed under the assignment. The credit of the Assignee must be greater than or equal to the credit of the Assignor at the time the obligation was originally granted. For information regarding the credit-worthiness requirements, please contact the Participating TO's Project Manager. Email confirmation from the Participating TO will be sufficient to meet this requirement.
- Company documentation showing the affiliate relationship (i.e., membership agreement, operating agreement); and
- A fully executed Assignment Agreement or Assignment and Assumption Agreement between the Assignee and Assignor to confirm the transfer and effective date. The CAISO does not have a required format for an Assignment Agreement or Assignment and Assumption Agreement. The form and content of the agreement is at the discretion of the Assignee and Assignor; however, the final agreement must contain the following information:
  - The full and correct legal names of both the Assignor and Assignee;
  - The effective date of the assignment; and
  - Updated contact information for notifications.

### 3.5.2 Assignment to Non-Affiliates

To request a consent to assignment to a non-affiliate entity, the following documentation must be submitted to the CAISO prior to the requested effective date of the assignment:

- CAISO's consent prior to assignment. The CAISO Consent to Assignment template will be provided upon written request. This request may be made by contacting [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com).
- Written confirmation from the Participating TO that the intended Assignee meets the credit-worthiness requirements to fulfill any financial obligations that may be assumed under the assignment. The credit of the Assignee must be greater than or equal to the credit of the Assignor at the time the obligation was originally granted. For information regarding the credit-worthiness requirements, please contact the Participating TO's Project Manager. Email conformation from the Participating TO will be sufficient to meet this requirement.
- A fully executed Assignment Agreement or Assignment and Assumption Agreement between the Assignee and Assignor to confirm the transfer and effective date. The CAISO does not have a required format for an Assignment Agreement or Assignment and Assumption Agreement. The form and content of the agreement is at the discretion of the Assignee and Assignor; however, the final agreement must contain the following information:
  - The full and correct legal names of both the Assignor and Assignee;
  - The effective date of the assignment; and
  - Updated contact information for notifications.

### 3.6 Entity Name Changes

To request an entity/agreement holder name change, the following documentation must be submitted to the CAISO:

- Copy of the Secretary of State document to confirm the effective date of the name change and the correct legal spelling of the new company name.

### 3.7 Change of Ownership

In the event of a change of ownership, in which the existing entity/agreement holder name does not change, the following documentation must be submitted to the CAISO:

- Copy of the ownership agreement for CAISO records; and
- Updated contact information, if changes were made within the company where such changes to the contacts may be necessary.

### 3.8 Project and Resource Name Changes

Request for project name changes must be approved by the CAISO and Participating TO prior to implementation of the name change. Approval of a project name change depends on reasonable justification for the change and the proposed name must meet the naming convention guidelines outlined in the table in section 3.6.8.1 of this BPM. Any proposed name changes will be denied without reasonable justification. Ownership changes are not considered reasonable justification. The CAISO reserves the right to impose additional restrictions on project and resource naming conventions,

if necessary, to significantly reduce confusion and increase the ease of reliable operations, especially during stress conditions on the grid.



### 3.8.1 Project and Resource Naming Convention Guidelines<sup>2</sup>:

<b>Unacceptable Naming Configurations:</b>	<b>Examples of Unacceptable Names:</b>	<b>Examples Acceptable Names:</b>
<ul style="list-style-type: none"> <li>No company types (i.e., LLC, Inc.)</li> </ul>	Nash Solar, LLC; Nash Inc. Solar	Nash Solar
<ul style="list-style-type: none"> <li>No duplications over four iterations (i.e., Blythe, Borrego, Marsh)</li> </ul>	To be determined by CAISO	
<ul style="list-style-type: none"> <li>No megawatt values (MW)</li> </ul>	Nash Power Plant 20MW	Nash Power Plant
<ul style="list-style-type: none"> <li>The use of no more than two digits</li> </ul>		
<ul style="list-style-type: none"> <li>No Roman numerals</li> </ul>	Nash Power Plant I; Nash Power Plant II	Nash Power Plant 1; Nash Power Plant 2
<ul style="list-style-type: none"> <li>No acronyms unless identifying technology (i.e., PV)</li> </ul>	PJT Nash Solar	Nash Solar
<ul style="list-style-type: none"> <li>No special characters</li> </ul>	Nash Power Plant #1	Nash Power Plant 1
<ul style="list-style-type: none"> <li>No abbreviations similar to those used by CAISO</li> </ul>	To be determined by CAISO	
<ul style="list-style-type: none"> <li>No re-use of names once in CAISO systems</li> </ul>	To be determined by CAISO	
<ul style="list-style-type: none"> <li>No use of the word "Phase" (numbers only); however, when numbers are used for units it must be for the same project / owner</li> </ul>	Nash Power Plant Phase 1	Nash Power Plant 1
<ul style="list-style-type: none"> <li>No use of the word "Expansion" unless used in an incoming Interconnection Request for the purpose of increasing MW to an existing facility</li> </ul>	Nash Power Plant Expansion	Nash Power Plant 2
<ul style="list-style-type: none"> <li>No "license plate" looking configurations (<b><i>Dispatchers must be able to easily call out/pronounce a name.</i></b>)</li> </ul>	HJK23RJ	
<ul style="list-style-type: none"> <li>Names cannot begin with numbers</li> </ul>	3 Solar	
<ul style="list-style-type: none"> <li>Numbers cannot be spelled out</li> </ul>	Nash Solar Three	Nash Solar 4
<ul style="list-style-type: none"> <li>No use of "Cluster number; C1"</li> </ul>	Nash Power Plant C3; Nash Power Plant Cluster 3	Nash Power Plant

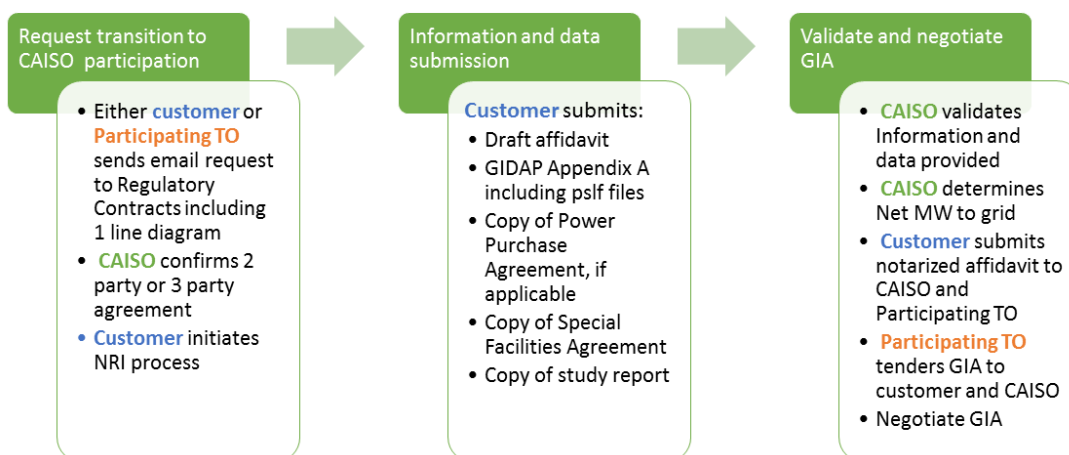
<sup>2</sup> The CAISO preference, when possible, is for the project resource name to be associated with the substation at which the resource connects.

## 4. Generating Unit Conversions to CAISO Markets

Section 25.1.2 of the CAISO Tariff applies to existing Generating Units that are CAISO Controlled Grid connected that must or desire to transition from existing two party interconnection agreements (between the owner or operator of the Generating Unit and the applicable Participating TO) directly to a three-party CAISO interconnection agreement if the Interconnection Customer can demonstrate to the CAISO and the Participating TO's satisfaction that the Generating Unit total generating capability, and electrical characteristics are substantially unchanged.

This BPM, and specifically this Section, focuses on the process for transitioning to a three party GIA among the customer, the Participating TO, and the CAISO. This BPM does not provide explicit detail about the requirements for the New Resource Implementation process, which includes all of the steps for a Generating Unit to become a CAISO participating resource. Information on those requirements is available at <http://www.caiso.com/participate/Pages/NewResourceImplementation/Default.aspx>.

### Conversion Process



### 4.1 Request

Generating Unit owners or Participating TOs request a GIA and transition to CAISO participation by submitting an email request to [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com) and [NRI@caiso.com](mailto:NRI@caiso.com). That request must include the most recent one line diagram of the Generating Unit depicting the interconnection to the Participating TO's system. The CAISO will review the request and confirm that a three party GIA among the customer, the Participating TO and the CAISO is appropriate.

## 4.2 Submit Information and Data

Once a three party agreement is determined to be appropriate, the customer will submit the following information and data to the CAISO:

- Draft affidavit  
<http://www.aiso.com/planning/Pages/GeneratorInterconnection/Default.aspx>
- GIDAP Appendix 1 Interconnection Request  
<http://www.aiso.com/Documents/GIDAPAppendix1-AttachmentA-Appendix1-InterconnectionRequest-GeneratingFacilityData.doc>, including both Power System Load Flow (“PSLF”) load flow and dynamic models. The load flow model should be provided in GE PSLF .epc format. The dynamic model should be provided using GE PSLF library models in .dyd format. In case the GE PSLF library does not contain the model for the technology of the Generating Facility, a user written \*.p EPCL file should be submitted. Because of a limitation on the number of user-defined models that can be used, it is recommended that the best available WECC-approved dynamics model be used Copy of the power purchase agreement, if applicable
- Copy of the special facilities agreement

## 4.3 Validate and Negotiate GIA

The CAISO and the Participating TO will review the submitted information and data to verify that the Generating Unit’s total generating capability and electrical characteristics are substantially unchanged. If the CAISO identifies changes and has any concern as to whether the changes are substantial, the CAISO will perform an assessment under Section 11 of this BPM to determine whether the changes are substantial (in which case the owner must go through the interconnection queue), or are not substantial (in which case the parties may proceed directly to the three party GIA.)

# 5. Multiple Phases of Generating Facilities

## 5.1 Overview

Any Interconnection Customer is allowed to develop its Generating Facilities in phases. A Phased Generating Facility is defined as a Generating Facility that is structured to be completed and to achieve Commercial Operation in two or more successive phases that are specified in a GIA, such that each phase comprises a portion of the total MW generation capacity of the entire Generating Facility. A Phased Generating Facility does not necessarily mean that each phase is a discrete Generating Unit that can be scheduled and bid into the CAISO’s markets. The Interconnection Customer would need to meet the metering standards for each phase of the Generating Facility in accordance with the BPM for Metering, and may obtain a separate Resource ID for each phase, if that is the Interconnection Customer’s objective.

All Generating Facilities, whether a Phased Generating Facility or not, achieving Commercial Operation are subject to the Reliability Network Upgrades and Interconnection Facilities required for each phase being placed in service. Requests for phasing can be made in the Interconnection Request, Appendix B revisions to the Interconnection Request, or through an MMA request. As outlined in Section 6.5.2 of this BPM, whether the request involves moving the CODs of the Generating Facility phases so that they occur before or after the COD specified in the Interconnection Request for the overall Generating Facility, a review must be undertaken to ensure that other generating facilities are not negatively impacted by the requested phasing of the Generating Facility or by the construction schedule for Network Upgrades and Interconnection Facilities.

A request for phasing after Appendix B is submitted between the Phase I and Phase II studies will be via the MMA. Similar to a modification request for COD extension, a request for phasing will not typically require a study. If the request is approved and the Generating Facility is then phased, the last phase must achieve commercial operation by the already approved COD specified for the entire Generating Facility. If the final phase of the Generating Facility is not going to achieve the currently approved COD (including any modifications allowed for through construction sequencing), then the Interconnection Customer must submit an MMA request for a new COD. A single MMA request can be submitted for both phasing and a COD extension if it is known that the Generating Facility is not going to achieve the currently approved COD at the time the MMA request for phasing is submitted and the delay in COD cannot be accommodated through construction sequencing. The phases and CODs, once determined, will be memorialized in the GIA.

## 5.2 Applicability

Each Interconnection Request can result in not more than one GIA; however multiple Interconnection Requests by the same owner at the same point of interconnection can be incorporated into one GIA. The CAISO will allow an Interconnection Customer to develop its Generating Facility in phases under a single GIA and allow the GIA to have co-tenants. All of the co-tenants to the GIA must agree to assume joint and several liability for all of the obligations relating to the Interconnection Request and specified in the GIA, i.e., all of the owners are both individually and collectively responsible for all of the interconnection obligations specified in the GIA. The CAISO does not require that all of the owners be affiliates of the Interconnection Customer.

The CAISO has found that there is a significant amount of setup and integration work required for the start of commercial operation on the CAISO controlled grid and has implemented the following limits on phasing:

- A minimum of 5 MW for each phase of a Generating Facility and a maximum number of 5 phases allowed for a Generating Facility.
- Because phasing may involve different CODs for each phase, the CAISO will require that no more than one phase can reach COD in a given month unless the phases have separate Resource IDs. The CAISO will coordinate with the Participating TOs on the timing of the phases to ensure reliability of the grid. The CAISO may make an exception to this policy on a case-by-case basis, depending on the project-specific facts. Please send an email to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com) to make this request.



Phasing requests will be processed as follows:

1. Interconnection Request: An Interconnection Customer can request phasing when it submits its initial Interconnection Request in Attachment 1 to the GIDAP Interconnection Request.
2. During the Phase I study process: An Interconnection Customer may submit a request for phasing during the Phase I study process, however, CAISO Interconnection Studies assume a single COD and a single MW capacity based on the last COD requested and total MW for the Generating Facility, and thus the CAISO would not make any changes to the Phase I study assumptions or reflect the phasing in the study report. The first time the CAISO will reflect the phasing request in a study report is in the Phase II studies.
3. Between Phase I and Phase II Studies: The Interconnection Customer may request phasing during this period by including the phasing request when submitting GIDAP Appendix 3, Appendix B. Appendix B is a data form that revises the Interconnection Request that the Interconnection Customer must submit after the Phase I study to update the Interconnection Request for the Phase II study.
4. During the Phase II study process: Any phasing request made during the Phase II study process, will require a MMA to determine if the requested change would impact other generating facilities. As noted above, CAISO Interconnection Studies assume a single COD and a single MW capacity based on the last COD requested and total MW for the Generating Facility in that study process and, similar to changes for phasing requested in the Phase I process, that assumption would not change for the Phase II Study or be reflected in the study report. The Interconnection Customer must submit a request for phasing and the phasing dates to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com). If the phasing request is determined to be a Material Modification, then the Interconnection Customer will not be permitted to implement its phasing proposal but the Interconnection Request may be withdrawn and a new Interconnection Request could be submitted in the next cluster study window if the Interconnection Customer would still like to pursue phasing. If the request for phasing is approved, the first time the CAISO will incorporate the phasing request is in the negotiation of the GIA.
5. After Phase II Study Results are published: Any phasing request made after the Phase II study results are published will require a MMA to determine if the requested change would impact other Generating Facilities. The Interconnection Customer must submit a request for phasing and the phasing dates to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com). If the phasing request is determined to be a Material Modification, then the Interconnection Customer will not be permitted to implement its phasing proposal but the Interconnection Request may be withdrawn and a new Interconnection Request could be submitted in the next cluster study window if the Interconnection Customer would still like to pursue phasing. If the request for phasing is approved, the first time the CAISO will incorporate the phasing request is in the negotiation of the GIA. The Interconnection Customer's GIA will include discrete milestones for each phase of the Generating Facility in Appendix B to the GIA to provide a mechanism to track and enforce obligations for each phase. Once a Generating Facility is approved for phasing and the phasing

is incorporated into the customer's GIA, any request to modify the phasing plan will require a new MMA request.

6. After execution of the GIA: Any phasing request made after execution of the GIA will require a MMA to determine if the requested change would impact other Generating Facilities. The Interconnection Customer must submit a request for phasing and the phasing dates to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com). If the phasing request is determined to be a Material Modification, then the Interconnection Customer will not be permitted to implement its phasing proposal but the Interconnection Request may be withdrawn and a new Interconnection Request could be submitted in the next cluster study window if the Interconnection Customer would still like to pursue phasing. If the request for phasing is approved, the first time the CAISO will incorporate the phasing request is in an amendment to the GIA. The Interconnection Customer's GIA will include discrete milestones for each phase of the Generating Facility in Appendix B to the GIA to provide a mechanism to track and enforce obligations for each phase. Once a Generating Facility is approved for phasing and the phasing is incorporated into the Interconnection Customer's GIA, any request to modify the phasing plan will require a new MMA request.

More detailed information on the requirements for the MMA process, including timeline, deposit information, and technical data requirements, is available in Section 6 of this BPM. In each instance, the requested phasing structure must be agreed to by the CAISO and applicable Participating TO.

## 6. Overview of Modification Provisions

The Interconnection Customer must submit to the CAISO, in writing, a request to modify any information provided in the Interconnection Request and must have the request approved before the Interconnection Customer will be permitted to make the change. Requests to decrease the MW capacity are not permitted except to the extent permitted by the relevant interconnection procedures, as discussed further below in sections 6.1.2 and 6.1.3. Any request to increase maximum output of a project must be approved through the submission of a new Interconnection Request.

The request to modify will be approved, and the Interconnection Customer shall retain its Queue Position, if a modification is determined not to be a Material Modification. A request to modify will be denied, and the Interconnection Customer shall not be permitted to make the modification while retaining its Queue Position, if the modification is determined to be a Material Modification.

The CAISO will use the same process and criteria to review modification requests for a generation project studied under the cluster study process as it does to review projects studied under the serial study process.

A Material Modification is defined in CAISO Tariff Appendix A as "modification that has a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date." Once a request is received, the CAISO will perform a Material Modification Assessment ("MMA"). The following are examples of modifications which may be considered a Material Modification if, upon review in the MMA, it is deemed to adversely impact:



- the timeline of the Queue Cluster's Interconnection Study Cycle by requesting the MMA in advance of other existing tariff opportunities to modify the project (i.e. between Phase I and Phase II Interconnection Studies);
- the Participating Transmission Owner ("Participating TO") (such as by shifting costs from the Interconnection Customer to the Participating TO);
- the costs assigned to other Interconnection Customers;
- the timing or cost for the construction of Network Upgrades (reliability and/or deliverability) which are intended to be utilized by multiple Interconnection Customers unless the Interconnection Customer requesting the modification is willing to mitigate its impact, e.g., by continuing to meet its security and payment obligations on the schedule in its Generation Interconnection Agreement with respect to those Network Upgrades; or
- the timing or cost of other Interconnection Customers' Interconnection Facilities that are dependent on the Network Upgrades or Interconnection Facilities of the Interconnection Customer requesting the change, unless the Interconnection Customer requesting the modification is willing to mitigate its impact, e.g., by continuing to meet its security and payment obligations on the schedule in its Generation Interconnection Agreement with respect to those Network Upgrades or Interconnection Facilities.

A modification request will be approved if the criteria set forth below are met, and the Interconnection Customer is in good standing. An Interconnection Customer is in good standing if it is in full compliance with its obligations under its GIA, if it has one, and the terms of the applicable interconnection procedures in accordance with the CAISO Tariff. An Interconnection Customer's obligations under the GIA and interconnection procedures include milestones, postings and required payments. With respect to modifications where CAISO consent is required, the CAISO will not unreasonably withhold consent for timely modification requests which are determined to not be Material Modifications.<sup>3</sup>

In response to the modification request, the CAISO, in coordination with the Participating TO(s) and, if applicable, any Affected System Operator, will evaluate the proposed modification. In addition to determining if requested modifications are Material Modifications, the CAISO will assess modification requests to ensure that transmission and generation schedules are consistent with each other and, if the request is for a COD extension, the length of time the project has been in the Interconnection Queue.

The CAISO shall inform the Interconnection Customer in writing of whether its requested modification constitutes a Material Modification. In the event that the proposed modification does not constitute a Material Modification, and the Project has not been in the Interconnection Queue longer than the limits described in the Tariff,<sup>4</sup> the modification will be approved and the CAISO will consider the change to the project to be final (*i.e.*, once the modification is approved, a new modification request and approval would be needed to undo the approved modification). The Interconnection Customer shall then provide the results to any Affected System Operator, if applicable. The CAISO will not perform informational analysis or "what-if" studies regarding proposed modifications to generation facilities. However, as noted in Section 6.4.7.2 below, if the modification is approved subject to certain conditions, the Interconnection Customer will be given

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<sup>3</sup> See Appendix S, Section 1.3.4; Appendix T, Section 3.4.5; Appendix U, Section 4.4.3; Appendix Y, Section 6.9.2.2; or Appendix DD, Article 6.7.2.2 as applicable.

<sup>4</sup> See Appendix U, Section 3.5.1; Appendix Y, Section 3.5.1.4; Appendix DD, Section 3.5.1.4; as applicable.



the opportunity to review those conditions and notify the CAISO if it still wants to proceed with the modification.

The CAISO believes the Participating TO should submit a modification request to the CAISO if the Participating TO proposes changes to the scope of, or schedule for, planned Network Upgrades or Participating TO's Interconnection Facilities. The Participating TO should include in the request a description of the proposed changes, the Interconnection Customers that they believe will be impacted, the impacts on those Interconnection Customers, a description of potential alternatives considered, if applicable, and the reason for selecting the proposed modification.

If the Participating TO fails to submit a modification request to the CAISO when changes are needed to the scope of, or schedule for, planned Network Upgrades or Participating TO's Interconnection Facilities, then an impacted Interconnection Customer may submit a Material Modification Request for such modifications. Upon CAISO verification that the requested modification(s) are solely or primarily due to such scope or schedule changes, the Interconnection Customer will not be charged further for the assessment and the \$10,000 deposit will be returned to the Interconnection Customer.

For example, if the proposed modifications are due to a six-month delay in completion of the PTO's Interconnection Facilities or Reliability Network Upgrades and the modification request proposes six-month delay in the In-Service Date and Commercial Operation Date of the project, then the Interconnection Customer will not be charged further for the assessment and the \$10,000 deposit will be returned to the Interconnection Customer.

The CAISO will review the information submitted to assess the Participating TO's request and evaluate whether any other projects are affected by the proposed modification. When the Participating TO initiates a modification request, the CAISO will create a work order number and make reasonable efforts to inform the Interconnection Customer and make reasonable efforts to obtain its concurrence with the proposed change. Although the Participating TO may perform thorough research before submitting a modification request, the CAISO will perform its own review of the request in order to create documentation for the CAISO's conclusion and to ensure a complete and independent analysis of the request.

Projects studied in the serial study process may have the ability in accordance with Appendix U, Section 7.5 or 8.5 to request a re-study if a modification request is rejected, provided the request meets the criteria of the applicable section.

## **6.1 Timing of Modification Requests**

Modifications can be requested at any time, but the CAISO will only process requests at certain times, as discussed further below.

### **6.1.1 Requests During the Project's Interconnection Studies**

The CAISO will accept modification requests from projects at any time. However, the CAISO may not be able to process some modification requests, depending upon the type of the request, while the project is being studied during the Phase I process or Phase II Interconnection Study process for that project, or other studies applicable to that project. An example of projects whose modifications the CAISO may not be able to consider at certain times in 2014 are Cluster 6 projects during the Phase II and Reassessment study processes, and Cluster 7 projects during the Phase I study process, where the requested modification could affect the study results. The reason for this is that once a study commences, the study assumptions cannot be changed.

Otherwise, the study would need to be re-started with the updated information based on the modification requests. Additionally, the CAISO will defer evaluation of any modification requested pursuant to this section by an Interconnection Customer participating in the Generator Downsizing Process until the completion of that Generator Downsizing Process.

In the event that a project submits a modification request that cannot be completed in the 45 calendar day assessment period outlined in section 6.4.1 of this BPM, the CAISO will notify the Interconnection Customer and provide an estimated completion date with an explanation of the reason why additional time is required.

Information about study timeframes is available on the CAISO website under Planning > Generator Interconnection > GIDAP Customer guidelines (<http://www.caiso.com/Documents/GIDAPCustomerGuidelines.xls>)

### **6.1.2 Requests Submitted Between the Phase I and Phase 2 Interconnection Studies<sup>5</sup>**

Interconnection Customers have an opportunity to undertake certain modifications that are specifically enumerated in the GIDAP following the Phase I Interconnection Study Results Meeting. Such modifications are not considered material at this point in the process, and therefore do not require a MMA. These modifications are:

- a decrease in the MW capacity of the proposed Generating Facility;
- a modification to the technical parameters associated with the Generating Facility technology or Generating Facility step-up transformer impedance characteristics;
- a modification to the interconnection configuration, while not changing the Point of Interconnection (“POI”); and
- a change of deliverability status 1) from Full Capacity Deliverability Status or Partial Capacity Deliverability status to Energy Only Deliverability Status; (2) from Full Capacity Deliverability Status to Partial Deliverability Status; or (3) to a lower level of Partial Capacity Deliverability Status.

For any modification other than these, the Interconnection Customer must first request that the CAISO evaluate whether such a modification is a Material Modification. In response to the Interconnection Customer’s request, the CAISO, in coordination with the affected Participating TO(s) and, if applicable, any Affected System Operator, shall evaluate the proposed modification prior to approving it and the CAISO shall inform the Interconnection Customer in writing of whether the modifications would constitute a Material Modification. Any change to the POI, except than that specified by the CAISO in an Interconnection Study or otherwise allowed under the CAISO Tariff or Business Practice Manuals (e.g., as provided in Section 6.1.5 below), shall constitute a Material Modification.

The Interconnection Customer shall remain eligible for the Phase II Interconnection Study if the modification is reviewed and it is determined not to be a Material Modification. If the modification is determined to be a Material Modification and the Interconnection Customer nevertheless intends to implement the change, then the

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<sup>5</sup> See Appendix U, Section 4.4.1 or 4.4.2; Appendix Y, Section 6.9.2.2; or Appendix DD, Section 6.7.2.2, as applicable.

current Interconnection Request must be withdrawn from the applicable study process and the Interconnection Customer may submit a new Interconnection Request in a subsequent Queue Cluster or, if it qualifies, under one of the other study tracks (Independent Study Process or Fast Track Process).

### 6.1.3 Requests Submitted After Phase II Interconnection Studies

For any requested modification after Phase II Interconnection Study results have been issued, the Interconnection Customer must first request that the CAISO evaluate whether such a modification is a Material Modification. The CAISO must be able to evaluate the change and find it acceptable without the need to undertake a re-study.<sup>6</sup> If the CAISO determines, pursuant to prudent engineering judgment, that a re-study is necessary, then the requested change shall be considered a Material Modification and, thus, is not permissible within the scope of the existing Interconnection Request.

In response to the Interconnection Customer's request, the CAISO, in coordination with the affected Participating TO(s) and, if applicable, any Affected System Operator, shall evaluate the proposed modification prior to approving it and the CAISO shall inform the Interconnection Customer in writing of whether the modification would constitute a Material Modification. Any change to the POI, except that allowed under the CAISO Tariff or Business Practice Manuals, shall constitute a Material Modification.

If a modification is determined to be a Material Modification and the Interconnection Customer nevertheless intends to implement the change, then the current Interconnection Request must be withdrawn from the applicable study process and the Interconnection Customer may submit a new Interconnection Request in a subsequent Queue Cluster or, if it qualifies, under one of the other study tracks.

## 6.2 Scope of Modifications

In general, the CAISO's business practice is to approve a requested modification that meets the following criteria:

- the modification will not impact the timeline of any Queue Cluster's Interconnection Study Cycle however, modification requested during the study cycle will be held until the study cycle is complete;
- the type of modification being requested is not already addressed in the CAISO Tariff or BPMs through a separate process (e.g. the forthcoming annual downsizing process);
- the modification will not adversely impact another Interconnection Customer's costs;
- the modification will not adversely impact the In-Service Date or Commercial Operation Date of any other Interconnection Customer's project;

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<sup>6</sup> A re-study would be needed if the requested modification requires the CAISO or Participating TO to perform a dynamic stability study, post-transient governor power flow study or other similar complex engineering study.

- the modification will not adversely impact the Participating TO (e.g., by shifting costs from the Interconnection Customer to the Participating TO);
- the modification will not adversely impact the timing for or cost of the construction of Network Upgrades (reliability and deliverability) that are intended to be utilized by multiple Interconnection Customers unless the Interconnection Customer requesting the modification is willing to mitigate its impact, e.g., by continuing to meet its security and payment obligations on the schedule in its Generation Interconnection Agreement with respect to those Network Upgrades;
- the modification will not adversely impact the timing or cost of other Interconnection Customers' Interconnection Facilities that are dependent on the Network Upgrades or Interconnection Facilities of the Interconnection Customer requesting the change unless the Interconnection Customer requesting the modification is willing to mitigate its impact, e.g., by continuing to meet its security and payment obligations on the schedule in its Generation Interconnection Agreement with respect to those Interconnection Facilities or Network Upgrades;
- the transmission will be in place for the Interconnection Customer's proposed In-Service Date of the project;
- the project for which the request is being made is in good standing;
- the modification will not cause the length of time in the Interconnection Queue to exceed the maximum time in queue per Section 6.5.2.1 of this BPM; and
- the requested modification is compliant with other CAISO Tariff requirements.

This BPM goes into greater detail on the considerations as they apply to specific types of requested changes in Section 6.5 of this BPM.

## 6.2.1 Modifications That Are Approved Without Material Modification Assessment

The CAISO will assess the following types of requested modifications to confirm that they meet the criteria below. The customer must provide the CAISO and Participating TO with notice of the modification. The CAISO shall confirm that such modification is approved within five (5) Business Days of receiving the Interconnection Customer's notice.

### 6.2.1.1 After Phase I Study Results Meeting

Modifications timely submitted after the Phase I Study results are issued as outlined in Section 6.1.2 of this BPM.

### 6.2.1.2 De Minimis Reductions in Generating Facility Capacity<sup>7 8</sup>

If the final MW capacity of the proposed Generating Facility that is completed and achieves COD is reduced by no more than the greater of five percent (5%) of its MW capacity or 10 MW, but by no more than twenty-five percent (25%) of the MW capacity as specified in the GIA, then the project is deemed to have met the substantial performance obligations of the GIA. Such a reduction shall be considered a de minimis reduction and shall not constitute a breach of the Interconnection Customer's obligations under the CAISO Tariff or its GIA.

When its generation project achieves Commercial Operation, and that generation project has a de minimis reduction, the Interconnection Customer shall provide notice to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com). Such notice shall include the previous MW capacity and the new final MW capacity. De Minimis reductions shall not diminish the Interconnection Customer's responsibility for any costs or other obligations set forth in its GIA or the CAISO Tariff.

Interconnection Customers must request reductions in Generating Facility capacity that exceed the de minimis threshold must do so through the annual Generating Downsizing Process in Section 6.2.6.3 of the BPM for Generator Interconnection and Deliverability Allocation Procedures (GIDAP).

With respect to a Generating Facility with an executed GIA derived from either Appendix CC or Appendix EE to the CAISO Tariff, as they existed prior to the effective date of the tariff amendment adopting the CAISO's annual Generator Downsizing Process<sup>9</sup>, any capacity reduction permitted under Article 5.19.4 shall be performed in accordance with and be subject to Section 7.5.13 of Appendix DD.<sup>10</sup>

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<sup>7</sup> Appendix S, Section 1.4.1, Appendix U, Section 3.9.1, Appendix Y, Section 3.10.1, Appendix DD Section 7.5.13.1

<sup>9</sup> The tariff language was approved on July 31, 2014 effective August 1, 2014 by FERC in ER14-2063.

<sup>10</sup> Appendix DD section 5.19.4

### 6.2.1.3 Milestone Extension When Network Upgrades Are Delayed

In the event that the Participating TO determines that construction of a Network Upgrade, required pre-cursor Network Upgrade, or Participating TO's Interconnection Facilities are delayed and that any project milestones must be modified due to that schedule change, the Participating TO shall provide a notice to the CAISO and the Interconnection Customer(s) it believes are impacted by the delay that includes the previous In-Service Date and the new In-Service Date as well as any other required modifications.

The Participating TO notice to the CAISO should include a description of the proposed changes, the Interconnection Customer(s) that it believes will be impacted, the impacts on those Interconnection Customer(s), a description of potential alternatives considered, if applicable, and the reason for selecting the proposed modification. The Participating TO notice to the Interconnection Customer should include a description of the proposed changes, a description of potential alternatives considered, if applicable, and the reason for selecting the proposed modification.

The CAISO will review the information submitted to assess the Participating TO's request and evaluate whether any other projects are affected by the date change. The CAISO will review its conclusions and alternatives to the milestone delay considered, if applicable, with all impacted Interconnection Customers and the Participating TO before making a decision on the request.

The COD extensions associated with a Participating TO's delay in construction of upgrades should be commensurate. For example, the new In-Service Date of the project should be within approximately 6 months of the new in-service date for the Reliability Network Upgrades (*i.e.*, just because the upgrade is delayed does not give the Interconnection Customer an ability to further delay its project). In addition, the timeframes between the In-Service Date, Initial Synchronization Date, and COD should be similar to the number of days between these dates that were previously agreed to in the executed GIA, unless there is a valid reason to change those time periods which the Interconnection Customer must demonstrate to the CAISO. Thus if the Initial Synchronization Date was 30 days after the In-Service Date in the executed GIA, and the new In-Service Date is March 1, 2015, then the new Initial Synchronization Date should be March 31, 2015.

### 6.2.1.4 Construction Sequencing<sup>11</sup>

If the COD of a proposed Generating Facility is changed by approximately 6 months (either before or after the COD set forth in the GIA), then the requested change in dates for the In-Service Date, Initial Synchronization Date, and COD may be approved without going through the MMA process. Interconnection Customers with executed GIAs will communicate this information in their monthly status reports. Construction sequencing extensions may be exercised for up to a cumulative six (6) months before triggering the need for a MMA. A COD may only be extended pursuant to this section of the BPM if the required Reliability Network Upgrades are completed. If a COD needs to be extended because both Network Upgrades are delayed, and because of a construction sequencing issue, the Network Upgrade delay will be considered first, and then the clock will start on 6 months of allowable construction sequencing.

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<sup>11</sup> See Appendix U, Section 12.2; Appendix Y, Section 12.2; or Appendix DD, Section 14.2; as applicable.

### **6.2.1.5 Inverter Changes**

If the Interconnection Customer requests an inverter change for the project that is only a change in manufacturer, (i.e. the technology and electrical characteristics are unchanged, including the number and size of inverters), the change may be made without going through the MMA process provided the Participating TO concurs that dynamic analysis is not required. The Interconnection Customer shall include in its notice the current and proposed inverter manufacturer, the number of inverters, their respective MW capabilities, the maximum fault currents, and the power factor regulation range.

Changes that do not qualify under this Section may be evaluated under section 6.5.1.4 of this BPM.

## **6.3 Modification Assessment Deposit<sup>12</sup>**

The Interconnection Customer must include a modification assessment deposit at the time the Interconnection Customer requests modification. The CAISO will not commence a modification assessment without the deposit.

### **6.3.1 Modification Assessment Deposit Amount**

The modification assessment deposit is \$10,000. The modification assessment deposit will be applied against actual assessment costs and the Interconnection Customer will pay the actual costs of the assessment, which are initially drawn from the modification assessment deposit. The Interconnection Customer will pay by direct invoice any actual costs exceeding the modification assessment deposit.

### **6.3.2 Use of Modification Assessment Deposit**

The CAISO deposits all modification assessment deposits into an interest-bearing account at a bank or financial institution designated by the CAISO. The modification assessment deposit is applied to pay for prudent costs incurred by the CAISO, the Participating TOs, or third parties working at the direction of the CAISO or Participating TOs, as applicable, to perform and administer the modification assessment and to meet and otherwise communicate with Interconnection Customers with respect to their projects. The CAISO will create a separate work order number for each modification assessment in order to correctly track the actual costs.

The CAISO shall issue to the IC one or more invoices for the modification assessment that include a detailed and itemized accounting of each assessment expense incurred (including those incurred by the CAISO, the Participating TOs, and/or third parties) and corresponding amounts due, and that provide at least the same level of detail included in invoices for interconnection studies. The PTO and any third parties performing work on the assessment must invoice the CAISO for such work no later than 75 calendar days after the completion of the assessment. The CAISO shall draw from the modification assessment deposit any undisputed costs by the IC within thirty (30) calendar days of issuance of an MMA invoice.

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<sup>12</sup> See Appendix S, Section 1.3.4.2; Appendix U, Section 4.4.6; Appendix Y, Section 6.9.2.3; or Appendix DD, Article 6.7.2.3 as applicable.

Whenever the actual cost of performing the modification assessment exceeds the modification assessment deposit, the invoice will direct the IC to pay the excess amount, and the IC shall pay the undisputed amount in accordance with the invoice within thirty (30) calendar days. If the IC fails to timely pay the actual costs exceeding the deposit and such costs have not been disputed, the Project will no longer be considered to be in good standing by the CAISO. The CAISO is not obligated to continue to conduct the assessment unless and until the IC has paid all undisputed amounts.

The Interconnection Customer shall be refunded any portion of its modification assessment deposit, including interest earned at the rate provided for in the interest-bearing account from the date of deposit to the date of completion of the assessment that exceeds the costs incurred by the CAISO, Participating TOs, and/or third parties, as applicable, have already incurred on the Interconnection Customer's behalf to perform the assessment. In the event that the Interconnection Customer withdraws its modification request prior to completion of the assessment, the Interconnection Customer shall be refunded any portion of its modification assessment deposit (including interest earned at the rate provided for in the interest-bearing account from the date of deposit to the date of the Interconnection Customer's withdrawal) that exceeds the costs the CAISO, Participating TOs, and third parties have incurred on the Interconnection Customer's behalf.

The CAISO will publish aggregated cost data regarding modification assessments. The data report will be published annually and will include the types of modification requests assessed and the cost for the assessment. The data will be aggregated to a level such that individual projects cannot be identified.

## **6.4 Assessment Process and Timeline<sup>13</sup>**

### **6.4.1 Obligation for Assessment**

Each modification assessment will be performed under the direction and oversight of the CAISO, although the Participating TO or third parties engaged by the Participating TO may perform certain parts of the assessment work pursuant to agreement between the CAISO and the Participating TO as to their allocation of responsibilities.<sup>14</sup> The CAISO will conduct or cause to be performed the required modification assessment and any additional assessment the CAISO determines to be reasonably necessary, and will direct the applicable Participating TO to perform portions of the assessment where the Participating TO has specific and non-transferable expertise or data and can conduct the assessment more efficiently and cost-effectively than the CAISO.

The CAISO shall use reasonable efforts to commence and complete assessments within 45 calendar days.<sup>15</sup> For any portion of an assessment performed at the direction of the CAISO by the Participating TOs or by a third party, the CAISO shall require that this work also be completed within the timelines set forth in this BPM. If

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<sup>13</sup> See Appendix S, Section 1.3.4.2; Appendix U, Section 4.4.6; Appendix Y, Section 6.9.2.3; or Appendix DD, Section 6.7.2.3; as applicable.

<sup>14</sup> See Appendix U, Section 13.2, 13.3 and 13.4; Appendix Y, Appendix 4; and Appendix DD, Appendix 4; as applicable.

<sup>15</sup> See Appendix S, Section 1.3.4.2; Appendix U, Section 4.4.6; Appendix Y, Section 6.9.2.3; Appendix DD, Section 6.7.2.3 and this BPM Section 3.4



an assessment cannot be completed within those timelines, the CAISO will notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required.

The CAISO will also coordinate with Affected System Operators under Appendix Y, Section 3.7 and GIP BPM Section 18.1; and Appendix DD, Section 14.4 and GIDAP BPM Section 12.4. However, the Interconnection Customer is responsible for contracting with any applicable Affected System for construction of Affected System Network Upgrades which are necessary to safely and reliably connect the proposed Generating Facility to the CAISO Controlled Grid. The CAISO will provide Affected System Operators with information regarding any modification that has been approved.

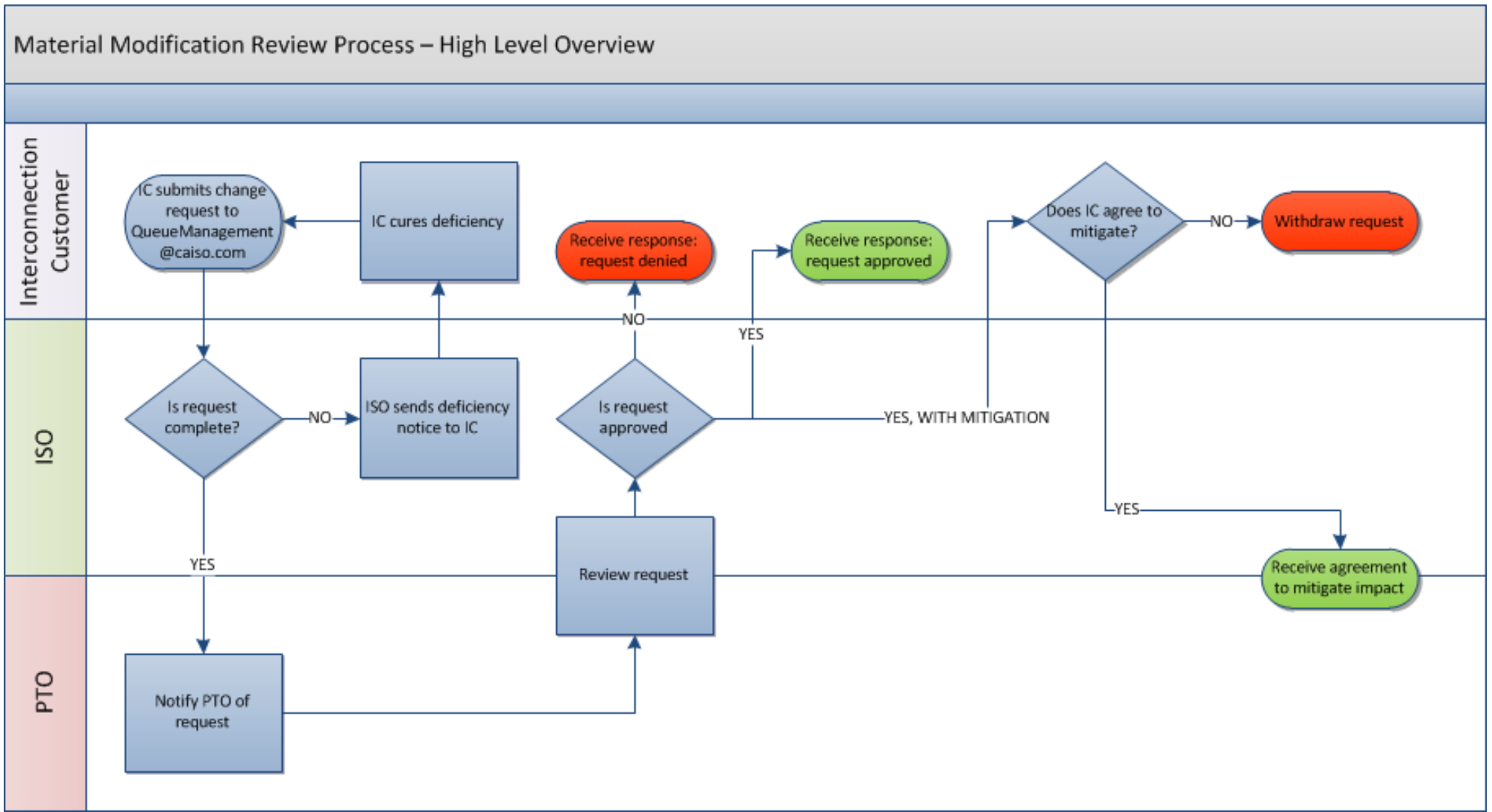
## 6.4.2 How and What to Submit

The Interconnection Customer or Participating TO should submit all modification requests to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com) for review. The subject of this email should include the project name, queue number, and study process (i.e., serial, SGIP, C4, etc.). In addition to the modification assessment deposit, all requests should include:

- a description of the proposed changes to the Generating Facility;
- applicable technical information and diagrams (except for changes to Appendix B milestones, all change requests should be accompanied by a complete revised Attachment A to the Interconnection Request, including both PSLF load flow and dynamic models. The load flow model should be provided in GE PSLF .epc format. The dynamic model should be provided using GE PSLF library models in .dyd format. In case the GE PSLF library does not contain the model for the technology of the Generating Facility, a user written \*.p EPCL file should be submitted. Because of a limitation on the number of user-defined models that can be used, it is recommended that the best available WECC-approved dynamics model be used);
- proposed updates to the project milestones; and
- a description of project status including the reason for the change (the description of the reason for the change is the starting point for the CAISO business assessment described in Section 6.4.6 of this BPM).

## 6.4.3 High-level Overview of Assessment Process

A graphical representation of the review process is presented on the next page.



#### 6.4.4 Timeline

The modification assessment will not commence until a completed modification request (including all of the necessary technical documents) has been deemed valid and data complete by the CAISO and the Interconnection Customer's modification assessment deposit have been received. Each modification assessment will be completed, and a response will be provided to the Interconnection Customer in writing, within 45 calendar days after the CAISO receives a completed modification request and modification assessment deposit, unless the modification request is submitted during the Reassessment process, the Phase I or Phase II study or any other exception provided for under the Tariff (see BPM Section 6.1.1 above). If the modification assessment cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required.

#### 6.4.5 Engineering Analysis

In the event that the Interconnection Customer or the Participating TO was not copied on the modification request, the CAISO will forward the request to the appropriate party. The CAISO will work in coordination with the Participating TO for modifications requested by the Interconnection Customer. For modifications requested by the Participating TO, the CAISO will coordinate with the impacted Interconnection Customer(s).

#### 6.4.6 Business Assessment

For modification requests from Interconnection Customers or the Participating TO, the CAISO will perform a business assessment of the project. The purpose of the business assessment is to:

- ensure compliance with applicable CAISO Tariff provisions;
- ensure compliance with the executed IA or study results, as applicable;
- verify whether substantially similar modification requests have been received previously and ensure that, where appropriate given the nature of the modification request and consistent with applicable CAISO Tariff provisions, the modification is treated comparably to previous modification requests; and
- consider the length of time the project has been in the queue.<sup>16</sup>

Consistent with these principles, the CAISO will consider each modification request review on its own merits.

#### 6.4.7 Results and Next Steps

The CAISO will draft a response letter to the Interconnection Customer based on the engineering analysis and the business assessment. The CAISO will coordinate with

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<sup>16</sup> See Appendix U, Section 3.5.1; Appendix Y, Section 3.5.1.4; Appendix DD, Section 3.5.1.4; as applicable.

the Participating TO to address any issues and/or concerns raised by the Participating TO. A final letter will then be issued by the CAISO.

For a modification request received from a Participating TO, based on the assessment, the CAISO will coordinate with the impacted Interconnection Customer to address any issues and/or concerns raised by the Interconnection Customer. A final letter will then be issued by the CAISO.

The CAISO will issue a letter stating that the modification request is either approved, approved with mitigation, or denied:

#### **6.4.7.1 Approved**

A modification request that is determined not to be a request for Material Modification is considered approved when the CAISO issues a final letter approving it. The approved modification will be incorporated into any future amendments to the GIA.

#### **6.4.7.2 Approved with Mitigation**

A modification request that is approved under specific conditions outlined in the CAISO response to the Interconnection Customer is approved with mitigation. The Interconnection Customer must explicitly agree to the mitigation for the request to be considered final and approved. If the Interconnection Customer does not provide its concurrence within the timeframe specified in the letter, the requested modification will be deemed to be denied.

#### **6.4.7.3 Denied**

A modification request that is determined to be a Material Modification or otherwise not permitted under the Tariff will be denied. If the Interconnection Customer nevertheless informs the CAISO that it intends to implement the change, then the Interconnection Request must be withdrawn. The Interconnection Customer may re-submit the modified Interconnection Request as a wholly new and separate request in a subsequent Queue Cluster or if it qualifies, under one of the other study tracks (Independent Study Process or Fast Track Process).

## **6.5 Types of Modifications**

### **6.5.1 Point of Interconnection (POI)**

During the course of the Interconnection Studies, the Interconnection Customer, Participating TO or the CAISO may identify changes to the planned interconnection that may improve the costs and benefits (including reliability) of the interconnection. To the extent the identified changes are acceptable to the applicable Participating TO(s), the CAISO and the Interconnection Customer, such acceptances not to be unreasonably withheld, the CAISO shall modify the POI.

As noted in Section 6.1.2 above, after completion of the study process, the CAISO will review POI change requests through the modification assessment process. However, the engineering scope of these reviews is limited, and if the CAISO and Participating TO cannot conclusively determine that the proposed POI change improves the costs and benefits without a re-study, the CAISO cannot approve the POI change. In other words, in order to approve the POI change the improved costs and benefits must be

obvious to the Interconnection Customer, the Participating TO, and the CAISO without a re-study.

## **6.5.2 COD Changes**

### **6.5.2.1 Time in Queue**

For projects studied in the *serial* study process, the In-Service Date shall not exceed ten (10) years from the date the Interconnection Request is received by the CAISO. For projects studied in the *cluster* study process the COD shall not exceed seven (7) years from the date the Interconnection Request is received by the CAISO.<sup>17</sup>

Interconnection Customers requesting COD extensions beyond those timeframes must clearly demonstrate that engineering, permitting and construction will take longer than the applicable maximum period and that circumstances that caused the delay were beyond the control of the Interconnection Customer. In addition, the IC must demonstrate how the requested COD is achievable in light of any engineering, permitting and/or construction impediments. The CAISO and Participating TO will not unreasonably withhold agreement to this extension, but the Interconnection Customer must provide sufficient documentation to support the request in its modification request.

### **6.5.2.2 COD Extensions as They Relate to Financial Obligations**

Any permissible extension of the COD will not alter the Interconnection Customer's obligation to finance Network Upgrades where the Network Upgrades are required to meet the earlier COD(s) of other Generating Facilities that have also been assigned cost responsibility for the Network Upgrades.

The CAISO will not permit a COD extension as a vehicle for delaying security postings or other milestones.

### **6.5.2.3 Phased Implementation for Market Participation**

The CAISO has created a block testing and implementation pre-commercial process during Trial Operation for Generating Facilities. The process provides the ability to declare Commercial Operation for Markets ("COM") in advance of the Generating Facility's COD (or COD for a generation-project phase) and gives Interconnection Customers the opportunity to bid into the CAISO markets, provide Resource Adequacy ("RA") capacity, and obtain Participating Intermittent Resource ("PIR") certification for a designated portion ("block") of their Generating Facility. Section 7 of this BPM provides a more detailed description of the process for requesting block testing and implementation.

### **6.5.2.4 COD Accelerations**

The CAISO and Participating TO review requests for COD acceleration in the same way that COD delays are reviewed, but with an increased focus on the construction

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<sup>17</sup> See Appendix U, Section 3.5.1; Appendix Y, Section 3.5.1.4; Appendix DD, Section 3.5.1.4; as applicable.

schedule for Network Upgrades and Interconnection Facilities. If the construction schedule for Network Upgrades or Interconnection Facilities to support the proposed COD acceleration is not achievable, the Interconnection Customer will not be permitted to accelerate its COD. Additionally, if the CAISO and Participating TO do not have sufficient information to make a determination within the modification review process that the proposed COD acceleration would not constitute a material modification, and the proposed accelerated COD is not within 6 months of the approved COD, the Interconnection Customer will not be permitted to accelerate its COD. Alternatively, the Interconnection Customer can request and fund a Limited Operation Study in accordance with Article 5.9 of the GIA.

### **6.5.3 Changes to the Fuel Type of the Proposed Project**

Generally, a change to a project's fuel type absent a reduction in total MW capacity cannot be evaluated without a re-study, because the output profile of various fuel-types is different, and as outlined in Section 6.1.3 of this BPM, where the CAISO has granted modifications after the conclusion of an Interconnection Customer's Phase II Interconnection Study phase, the CAISO must be able to evaluate the change and find it acceptable without the need to undertake a re-study in order to approve it as non-material. The CAISO will consider a change in fuel type if the Interconnection Customer is willing to retain the MW approved through the original study process for deliverability. For example, consider a hypothetical 300 MW wind-powered unit that has an output profile of 192 MW on-peak and 300 MW off-peak. If the Interconnection Customer wants to change the 300 MW wind-powered unit to a 192 MW solar-powered unit, then the CAISO will perform a MMA regarding that modification request.

### **6.5.4 Project Technology Changes**

#### **6.5.4.1 Inverter Changes**

Changes that do not qualify under Section 6.2.1.5 of this BPM must be reviewed in the MMA process.

As part of the MMA process, the CAISO will consider inverter changes that would result in a capacity increase greater than the project net capacity listed in the Interconnection Customer's interconnection request subject to the limits set forth below. The CAISO will approve such inverter changes only where the Interconnection Customer either (a) installs an automatic generator tripping scheme, or (b) provides specific design information regarding a mechanism that the Generating Facility's controller will use, to ensure that the total output of the Generating Facility never exceeds the project's net capacity before the inverter changes.

At no time may the Generating Facility's inverter configuration increase the project's net capacity by more than the greater of:

- ten percent (10%); or
- three (3) MW

For example:

<b>Generating Facility net-to-grid MW</b>	<b>Proposed Configuration</b>	<b>Resulting Increase</b>	<b>Outcome</b>
10 MW	12 inverters @ 1 MW each	+2 MW	Approved, less than 3 MW
10 MW	9 inverters @ 1.5 MW each	+3.5 MW	Denied, greater than 3 MW and 10%
200 MW	100 MW @ 2.2 MW	+20 MW	Approved, not greater than 10%

After the new inverter configuration is approved, the Interconnection Customer will provide the CAISO with the detailed specifications on limiting the Generating Facility's capacity to its approved net capacity. Once the CAISO has approved the specifications to limit the Generating Facility's capacity, the Interconnection Customer must install this approved control mechanism before the additional inverters are energized for testing.

#### **6.5.4.2 Equipment and Transformer Changes**

The CAISO will consider changes to project equipment and transformers to be non-material if the new equipment is substantially similar and does not cause significant electrical changes, including changes to short circuit duty or reactive support.

#### **6.5.5 Changes to Gen-Tie Path**

Changes to the gen-tie path are acceptable to the extent that there are no significant electrical changes or a POI change, and the change does not adversely impact other generation projects. For example, the CAISO will consider site location changes that might impact the length of the gen-tie.

#### **6.5.6 Site Location**

The CAISO and Participating TO will consider changes to the location of a proposed generating facility to the extent that the location change does not change the POI and will not cause other facets of the project to change that would require a re-study of the project.

#### **6.5.7 Changes to Point of Change of Ownership Location**

The CAISO and Participating TO will consider changes to the point of change in ownership (POCO) of a proposed generating facility to the extent that the location change does not change the POI and will not cause other facets of the project to change that would require a re-study of the project.

## **6.5.8 Decreases in Electrical Output (MW) of the Proposed Project<sup>18</sup>**

### **6.5.8.1 Between Phase 1 and Phase 2 Interconnection Studies**

After receiving from the Interconnection Customer any modification elections involving decreases in electrical output (MW) of the Generating Facility and/or changes (*i.e.*, reductions) in Deliverability Status as permitted in the CAISO tariff,<sup>19</sup> the CAISO, in coordination with the applicable Participating TO(s), will determine, based on best engineering judgment, whether such modifications will eliminate the need for any Network Upgrades identified in the Phase I Interconnection Study report. The CAISO and applicable Participating TO(s) will not conduct any re-studies in making this determination.

If the CAISO and applicable Participating TO(s) should determine that one or more Network Upgrades identified in the Phase I Interconnection Study are no longer needed, then, solely for purposes of calculating the amount of the Interconnection Customer's initial Financial Security posting under GIP Section 9.2, such Network Upgrade(s) will be considered to be removed from the plan of service described in the Interconnection Customer's Phase I Interconnection Study report and the cost estimates for such upgrades shall not be included in the calculation of Interconnection Financial Security in GIP Section 9.2. The CAISO will inform in a timely manner any Interconnection Customers so affected, and provide the Interconnection Customers with written notice of the revised initial Interconnection Financial Security posting amounts. No determination under this Section 6.5.8.1 of the BPM shall affect either (i) the timing for the initial Interconnection Financial Security posting or (ii) the maximum value for the Interconnection Customer's total cost responsibility for Network Upgrades established by the Phase I Interconnection Study report.

### **6.5.8.2 Annual Generator Downsizing Process<sup>20</sup>**

The CAISO has established an annual Generator Downsizing Process for Interconnection Customers requesting reduction in Generating Facility capacity above the de minimus thresholds described above. The details and timeline for that process contained in the BPM for Generator Interconnection and Deliverability Allocation Procedures (GIDAP), Section 6.2.6.3.

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<sup>18</sup> See Appendix U, Section 4.4.1 or 4.4.2; Appendix Y, Section 6.9.2.2; GIP BPM Section 9.3.1; Appendix DD, Section 6.7.2.2 or 6.7.3; GIDAP BPM Section 7.3.1; as applicable.

<sup>19</sup> See Appendix Y, Section 6.9.3; GIP BPM, Section 9.3.3; or Appendix DD, Section 7; GIDAP BPM Section 7.3.2; as applicable.

<sup>20</sup> See Appendix DD, Section 7.5 and the BPM for for Generator Interconnection and Deliverability Allocation Procedures



## 7. Commercial Operation for Markets

### 7.1 Overview

The CAISO has created a block testing and implementation process to facilitate the Trial Operation of Generating Facilities. Once the Interconnection Customer has determined that a discrete amount of MWs have completed commissioning, then that designated portion (“block”) of their Generating Facility or a Phased Generating Unit can declare commercial operation for market purposes only, or Commercial Operation for Markets (“COM”). COM is defined as the status of a portion of an Electric Generating Unit that has synchronized to the CAISO controlled grid and has completed on-site test operations and commissioning that is allowed to Bid into the CAISO markets in advance of achieving COD for the entire Electric Generating Unit. COM gives Interconnection Customers the opportunity to bid in the CAISO markets, provide Resource Adequacy (“RA”) MW, obtain Participating Intermittent Resource (“PIR”) certification for that block of their Generating Facility or Phased Generating Unit, and receive market revenue. However, COM does not require the Participating TO to commence repayment of Network Upgrades. Such repayment is not required until the COD defined in the GIA has been achieved. This opportunity allows the project to continue to operate in the market with a portion of its MW capacity while also participating in Trial Operations with test energy for the Generating Facility’s remaining MW capacity.

The COM opportunity is available for both Generating Facilities with a single COD or, if the Generating Facility is a Phased Generating Facility, with one COD for multiple Phases, or different CODs per Phase. Each Phase could have the same or a different COD such that the MW capacities of the Phases add up to the total MW capacity of the entire project, as specified in the Interconnection Request.<sup>21</sup>

### 7.2 COM Process and Timeline

In order to declare COM for a block of MW, the Interconnection Customer must 1) be approved to synchronize a quantity of MWs to the CAISO controlled grid; 2) believe a block of the Generating Facility is ready for COM; and 3) execute a Block Implementation Plan which states the Interconnection Customer for the Generating Facility agrees that it will abide by the CAISO Tariff requirements for Bidding into the CAISO markets, including penalties if applicable. The CAISO’s approval of the Generating Facility’s synchronization and declaration of COM is contingent on the evaluation of the status of the Reliability Network Upgrades (“RNUs”), Participating TO Interconnection Facilities, precursor Network Upgrades, Interconnection Customer Interconnection Facilities, and GIA requirements, including coordination with Affected Systems. The purpose of the Block Implementation Plan is to clearly identify the

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<sup>21</sup> A Phased Generating Facility is distinct from phased implementation of a Generating Facility. Regardless of whether an Interconnection Customer is proposing distinct phases or has distinct phases in its GIA, Interconnection Customers requesting to bring their Generating Facility on line in phases and the CAISO will work with the Interconnection Customer and the applicable Participating TO to allow phased implementation if other requirements have been met, including reliability network upgrades.

testing schedule, PIR schedule, and maximum Bidding schedule for the Generating Facility.

The Interconnection Customer must ensure that New Resource Interconnection (“NRI”) bucket pre-requisites have been met a minimum of thirty (30) calendar days prior to the first planned synchronization date of any Generating Facility capacity in order to pursue COM. Interconnection Customers that would like to pursue block implementation should submit a written request to [NRI@caiso.com](mailto:NRI@caiso.com) at least ten (10) business days prior to the COM date for the first block of capacity. A completed Block Implementation Plan must be included in the request. The process for synchronizing to the CAISO controlled grid and pursuing a block implementation through COM (including the template and guidelines for the Block Implementation Plan) is discussed in greater detail in the New Resource Implementation Guide on the CAISO website at <http://www.caiso.com/Documents/NewResourceImplementationGuide.doc> and CAISO Operating Procedure 5320.

## 8. Limited Operation Study

In the event that a generation facility’s associated RNU(s) are not reasonably expected to be In-Service prior to the Commercial Operation Date, the Interconnection Customer can request and fund a Limited Operation Study (“LOS”) in accordance with Article 5.9 of the GIA. The LOS will determine the extent to which the generating facility can generate without the RNU(s) being In-Service. The CAISO will accept requests for an LOS no earlier than 6-5 months prior to the Generating Facility’s Initial Synchronization ~~COD~~. If the Generating Facility is proposing to make other changes then an MMA will be required.

Interconnection Customers may request a LOS by emailing [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com) and will be responsible for the actual costs incurred for the LOS. Upon receipt of the request, the ISO will coordinate a discussion of the RNU(s) that are delayed among the Interconnection Customer, the PTO, and the ISO to determine the correct assumptions for the study. The CAISO and PTO will develop a draft study plan that identifies the scope and assumptions including test schedule for the generating facility, and the schedule for the study. The study scope and assumptions will be mutually agreed upon by the Interconnection Customer, PTO, and CAISO prior to the start of work. The Interconnection Customer will receive invoices from the CAISO that list study expenses incurred and corresponding amounts due. The Interconnection Customer shall pay all invoices within thirty (30) calendar days.

In addition, if the testing of the generating facility is delayed due to delays in RNUs, the Interconnection Customer should notify the ISO by emailing [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com) so that we can determine if an operating study similar to the LOS would be beneficial to establishing testing opportunities and limitations. If it is determined that an operating study would be informative, then the process described above for the LOS deposit and study plan will be used.

## 9. [placeholder for future PRR]

## 10. Retirement

Participating Generators that wish to retire their Generating Unit(s) must communicate their intent to the CAISO in writing to ensure that they are able to retain the Generating Unit's Full Capacity Deliverability Status (FCDS) or Partial Capacity Deliverability Status (PCDS) as elements of Resource Adequacy (RA) and CAISO Net Qualifying Capacity (NQC), when desired.<sup>22</sup> The CAISO keeps a list of Generating Units retaining deliverability status for the purpose of repowering on the CAISO website.<sup>23</sup> The typical scenarios for a retiring Generating Unit are:

**Scenario 1.** Retiring Generating Unit that wishes to reserve the Generating Unit's deliverability status and has either:

- a. been approved for the affidavit repowering process pursuant to Section 25.1.2 of the CAISO Tariff; or
- b. entered the CAISO generator interconnection queue to be studied for repowering pursuant to the GIDAP.<sup>24</sup>

**Scenario 2.** Retiring Generating Unit that wishes to reserve the Generating Unit's deliverability but has not yet:

- a. committed to or completed the assessment for the repowering process; or
- b. entered into the CAISO generator interconnection queue after a determination that it is ineligible for the affidavit repowering process.

**Scenario 3.** Retiring Generating Unit that will not repower, and has no need to reserve the Generating Unit's deliverability status.

This section of the BPM provides instructions for how Participating Generators and CAISO Metered Entities should communicate retirement plans to the CAISO to ensure that they are able to retain their deliverability status, if desired.<sup>25</sup> This section also explains how retiring Participating Generators may revise or terminate the Generating Unit's Participating Generator Agreement (PGA), Net Scheduled Participating Generator Agreement (NSPGA)—formerly known as the Qualifying Facilities Participating Generator Agreement (QFPGA)—pursuant to Sections 3.2.2 or 4.1.3 of the agreements, or the Meter

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22 More information on Resource Adequacy and Net Qualifying Capacity is available in Section 5 of the BPM for Reliability Requirements, [http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability Requirements](http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability%20Requirements)

23 See Net Qualifying Capacity List, as applicable.  
[http://www.caiso.com/Documents/Final2015NetQualifyingCapacity\\_RAResources.htm](http://www.caiso.com/Documents/Final2015NetQualifyingCapacity_RAResources.htm)

24 The CAISO's procedures for evaluating repower requests by an owner of an existing Generating Unit made pursuant to Section 25.1.2 of the CAISO tariff allow such entities to obtain a CAISO three-party GIA without having to participate in the CAISO GIDAP study process if they demonstrate that the "total capability and electrical characteristics of the Generating Unit will remain substantially unchanged." The repowered Generating Unit must utilize the same fuel source and point of interconnection to the CAISO Controlled grid as the existing Generating Unit. If the Generating Unit has not been approved (or knows that Section 25.1.2 will be inapplicable), the repowering applicant will need to submit the project into the CAISO generation interconnection queue in accordance with the GIDAP.

25 These processes are intended to ensure compliance with the requirements in Section 5 of the BPM for Reliability Requirements and CAISO Tariff Section 40 to retain deliverability.

Service Agreement for CAISO Metered Entities (MSACAISOME) pursuant to Sections 2.2.2 or 3.2.2 of the agreement, if applicable.

## 10.1 Instructions for Generating Units in Scenario 1

The Participating Generator will provide notice to [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com) sixty (60) calendar days in advance of retiring its Generating Unit(s). The notice should indicate that the Participating Generator has been approved for the affidavit repowering process or has entered the CAISO generator interconnection queue.<sup>26</sup> The plan for retaining deliverability generally will be captured in the affidavit for repowering, the repowering study results, or the executed 3-party GIA for the project, whichever was produced most recently.<sup>27</sup>

### 10.1.1 Removing the Generating Unit(s) from the PGA / NSPGA/ QFPGA

The Participating Generator will request a revision to the Schedule 1 of its PGA, NSPGA, or QFPGA by sending an email to [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com) with a redline version of the Schedule 1. Please insert a strikethrough in redline to the technical information to indicate “removal” of the Generating Unit(s) from the Schedule 1. This will not terminate the PGA, NSPGA, or QFPGA.

### 10.1.2 Submitting an Outage

The Participating Generator must submit an outage card documenting the retirement date sixty (60) calendar days in advance of planned retirement pursuant to CAISO Outage Management guidelines and procedures.<sup>28</sup>

### 10.1.3 Scheduling Coordinator Association

As a result of this request to remove the Generating Unit(s) from the PGA, NSPGA, or QFPGA, the Scheduling Coordinator must submit a letter to the CAISO to relinquish its association with the Generating Unit(s). In absence of the letter, a CAISO Customer Service Representative will contact the Scheduling Coordinator (SC) to initiate this process.

### 10.1.4 Removing the Metering Facilities from the MSACAISOME

If the meter(s) are connected, the MSACAISOME remains unchanged.

If the meters are disconnected, the CAISO Metered Entity will request a revision to the Schedule 1 of its MSACAISOME by sending an email to [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com) with a redline version of the Schedule 1. Please insert a strikethrough in redline to the technical information to indicate “removal” of the Metering Facilities from the Schedule 1.

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26 Generating Unit(s) that are ineligible for the affidavit repowering process but still wish to repower and retain their deliverability priority are required to enter the CAISO generator interconnection queue

27 See BPM for Reliability Requirements Section 5, as applicable.  
[http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability Requirements](http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability%20Requirements)

28 See Outage Management guidelines and procedures, as applicable,  
<http://www.caiso.com/market/Pages/OutageManagement/Default.aspx>

Please note that typically the removal of a Generating Unit from a PGA and requisite MSACAISOME would result in the automatic termination for the Generating Unit. If a unit has completed the repowering process, the CAISO will not terminate the MSACAISOME, even if the meters are disconnected. However, the CAISO reserves the right, at its discretion, to terminate the MSACAISOME pursuant to Section 4.2 of the agreement.

## 10.2 Instructions for Generating Units in Scenario 2

Participating Generators that have not committed to the CAISO's repowering process or are ineligible for the repowering affidavit process, but that need to retire or "mothball" their Generating Unit(s) and reserve their NQC must provide notice to [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com) sixty (60) calendar days before retiring the Generating Unit(s). In addition, the Participating Generator is required to submit a long-range outage request pursuant to Section 3 of the BPM for Outage Management<sup>29</sup> and Section 9 of the CAISO Tariff.<sup>30</sup> Within one (1) year of retiring its Generating Unit(s), the Participating Generator will then provide the CAISO a repowering plan to retain deliverability priority. Failure to do so may result in the loss of deliverability status or repowering rights.

### 10.2.1 Removing the Generating Unit(s) from the PGA / NSPGA/ QFPGA

The Participating Generator will request a revision to the Schedule 1 of its PGA, NSPGA, or QFPGA, by sending an email to [RegulatoryContracts@caiso.com](mailto:RegulatoryContracts@caiso.com) with a redline version of the Schedule 1. Please insert a strikethrough in redline to the technical information to indicate "removal" of the Generating Unit(s) from the Schedule 1. This will not terminate the PGA, NSPGA, or QFPGA.

### 10.2.2 Submitting an Outage

The Participating Generator must submit an outage card documenting the retirement date sixty (60) calendar days before retirement pursuant to CAISO Outage Management guidelines and procedures.<sup>28</sup>

### 10.2.3 Scheduling Coordinator Association

As a result of this request to remove the Generating Unit(s) from the PGA, NSPGA, or QFPGA, the Scheduling Coordinator must submit a letter to the CAISO to relinquish its association to the Generating Unit(s). In absence of the letter, a CAISO Customer Service Representative will contact the Scheduling Coordinator (SC) to initiate this process.

### 10.2.4 Removing the Metering Facilities from the MSACAISOME

If the meter(s) are connected, the MSACAISOME remains unchanged.

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<sup>29</sup> See BPM for Outage Management, as applicable. <http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=OutageManagement>

<sup>30</sup> See generally, Section 9 of the CAISO Tariff.

If the meters are disconnected, CAISO Metering will issue a Non-Compliance letter for potential decertification of the meters if not remedied within thirty (30) calendar days of issue pursuant to CAISO Metering guidelines and procedures,<sup>31</sup> as applicable.

CAISO will issue a notice of termination of the MSACAISOME if the Metered Entity fails to meet or maintain the standards for its Metering Facilities.

Please note that termination of the MSACAISOME will result in termination of the PGA, NSPGA, or QFPGA, if the repowering process has not been initiated.

## 10.3 Instructions for Generating Units in Scenario 3

Participating Generators and CAISO Metered Entities that wish to retire their Generating Unit(s) and Metering Facilities permanently, with no plans to repower, should submit a notice of termination to [RegulatoryContacts@caiso.com](mailto:RegulatoryContacts@caiso.com) ninety (90) calendar days before retiring their Generating Unit(s) pursuant to Section 3.2.2 of the PGA, NSPGA, or QFPGA, and Section 2.2.2 of the MSACAISOME. The retired generation resource's interconnection, repowering, and deliverability rights will then be terminated. Any future restart or repower on the same site or interconnection point will require a new resource interconnection request.<sup>32</sup>

### 10.3.1 Scheduling Coordinator Association

As a result of this request to remove the Generating Unit(s) from the PGA, NSPGA, or QFPGA, the Scheduling Coordinator must submit a letter to the CAISO to relinquish its association to the Generating Unit(s), which will then remove the Generating Unit(s) from the Master File. In absence of the letter, a CAISO Customer Service Representative will contact the Scheduling Coordinator (SC) to initiate this process.

## 11. Repowering

### 11.1 Overview of Generating Unit Repowering

The CAISO's procedures for evaluating repower requests by an owner of an existing Generating Unit made pursuant to Section 25.1.2 of the CAISO tariff allows such entities to obtain a CAISO three-party GIA without having to participate in the CAISO Generator Interconnection and Deliverability Allocation Procedure (GIDAP) study process if they demonstrate that the "total capability and electrical characteristics of the Generating Unit will remain substantially unchanged."

An "existing" Generating Unit is defined for this BPM as a Generator Unit that is currently interconnected to the CAISO Controlled Grid, and has delivered energy, not necessarily continuously, to the CAISO Controlled Grid within the last three years prior to requesting to repower. This three-year period aligns with the ability of a Generator

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31 See BPM for Metering, as applicable, <http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Metering>

32 See Resource Interconnection Guide

<http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx>

Unit to retain its deliverability status rights for up to three consecutive years if it becomes incapable of operating (BPM for Reliability Requirements Section 5.1.3.4).

The repowered Generating Unit must utilize the same fuel source and point of interconnection to the CAISO Controlled grid as the existing Generating Unit. Combustible fuel sources, such as coal, oil, biogas, and natural gas, will be considered the same for repowering purposes. Repowering the facility cannot result in exceeding the existing Generating Unit's prior deliverability status. Energy storage will be considered the same fuel source where the repowering Generating Unit repowers with energy storage. The repowered Generating Unit with energy storage cannot exceed the existing Generating Unit's total capability and capacity for deliverability status, and must agree to follow CAISO dispatch instructions when in the charging and/or discharging mode.<sup>33</sup>

## 11.2 Applicability

Section 25.1.2 of the CAISO tariff provides that owners of existing Generating Units can be exempted from the CAISO's interconnection study process if the "total capability and electrical characteristics of the Generating Unit will remain substantially unchanged."<sup>34</sup> Section 25.1.2 does not indicate what changes, if any, in transmission system performance would be considered by the CAISO and the applicable Participating TO to confirm the Generating Unit owner's representation that the existing Generating Unit's electrical characteristics are substantially unchanged. The two most common scenarios that arise in the context of Section 25.1.2 of the CAISO tariff are:

1. existing Generating Units that have not, to date, been required to enter into a three-party GIA, such as previously grandfathered qualifying facilities that must now comply with the CAISO tariff and enter into a three-party GIA; and
2. existing power plants that propose to repower one or more Generating Units.

Existing Generating Units that are not repowering (those falling into category (1) generally meet the "substantially unchanged" requirement and can move directly to a GIA without an assessment. For existing resources that are not seeking repowering

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<sup>33</sup> As an example, an existing wind generating facility typically is approximately 40% deliverable on peak. Thus, a change to an existing 100 MW wind generating unit could only allow 40 MW energy storage on peak.

<sup>34</sup> Section 25.1.2 refers to existing Generating Units "whose total Generation was previously sold to a Participating TO or on-site customer." However, Section 25.1 of the CAISO Tariff provides that existing units connected to the CAISO Controlled Grid that will be modified without increasing the total capability of the power plant need not be studied (or re-studied) by the CAISO so long as their electrical characteristics do not change such that their re-energization may violate Applicable Reliability Criteria. The determination of whether a repowering "may violate Applicable Reliability Criteria" essentially is the same as whether a unit's "total capability and electrical characteristics . . . will remain substantially unchanged," and therefore the CAISO applies the "substantially unchanged" test to repowerings that involve units converting from grandfathered interconnection arrangements as well as repowerings that have, or had, CAISO interconnection agreements.

see [Section 4 of this BPM](#). This Section focuses on the informational requirements and the assessments needed to determine whether a repowering request can be handled pursuant to Section 25.1.2 or if it needs to be studied in the same manner as a new project pursuant to the CAISO's GIDAP.

It is understood that any repower of a Generating Unit, unless replaced with identical equipment, will result in some changes to the total capability and electrical characteristics of the Generating Unit, and therefore some degree of change to the performance of the transmission system. Most of these changes can be attributed to improvements in technology or the unavailability of original equipment. The CAISO will consider changes to be "substantial" if there is a proposed change in fuel source or they are found to have an adverse impact on the transmission system, either of which would require the project to be evaluated pursuant to the CAISO's GIDAP.

Adverse impacts to a transmission system include increasing the power flow during normal or contingency conditions, any increase in the short circuit duty impacts, or adverse angular or voltage stability impacts, as compared to the impacts associated with the original Generating Unit. These types of impacts are described in more detail as follows:

**Adverse Flow Impact** – If a repower of a Generating Unit results in the same MW capacity and Net Qualifying Capacity, or a decrease in MW capacity at the Point Of Interconnection and Net Qualifying Capacity, and all CAISO tariff requirements regarding reactive power are met by the new Generating Unit, the repowering will not be considered to cause a substantial change to the total capability of the Generating Unit from a flow impact standpoint. In this case, there would be no adverse power flow impact on the CAISO Controlled Grid under normal and contingency conditions as compared with the original Generating Unit. Conversely, any increase in MW capacity or Net Qualifying Capacity would be considered a substantial change in total capability as this would increase the Generating Unit's power flow impacts.

**Short Circuit Duty Impact** – Any reduction in the short circuit duty of the repowered Generating Unit as compared with the original Generating Unit will not be considered an adverse impact and will not be considered a substantial change to the unit's electrical characteristics. Conversely, an increase in short circuit duty impact would be considered a substantial change to the electrical characteristics of the Generating Unit.

**Angular or Voltage Stability Impact** - The angular and voltage stability impacts of a Generating Unit directly depends on the type of generator and the power system control functions that the Generating Unit encompasses. A technical assessment may be required to determine if the system performance with the repowered generator has substantially deteriorated.

### 11.3 Interconnection Facilities Study

Although the capability and electrical characteristics for a repowered Generating Unit may be determined to be substantially unchanged—and therefore the Generating Unit will not need to participate in the CAISO's GIDAP study process—it may still be necessary for the generator owner applicant and the Participating TO to enter into an interconnection facilities study agreement to assure that Interconnection Facilities and telemetry or protective relay equipment are compliant with the Participating TO's



current interconnection requirements and standards, as well as any other relevant standards (e.g., NERC, WECC). Any additional interconnection facilities required as a result from this interconnection facility study will be incorporated into the GIA.

## 11.4 Entity Submission Requirements and Evaluation Process

In order to initiate a repowering review, the owner of the Generating Unit must submit an affidavit representing that the total capability and/or electrical characteristics of the Generating Unit will remain substantially unchanged. The affidavit also must outline if there has been or will be any changes to the Generating Unit and must include supporting information describing such changes.<sup>35</sup> Such affidavit shall be prepared using the standard affidavit template available on the CAISO website at: [http://www.caiso.com/Documents/RepoweringAffidavitTemplate\\_20141002.doc](http://www.caiso.com/Documents/RepoweringAffidavitTemplate_20141002.doc). Additional information can be included as necessary to describe any changes.

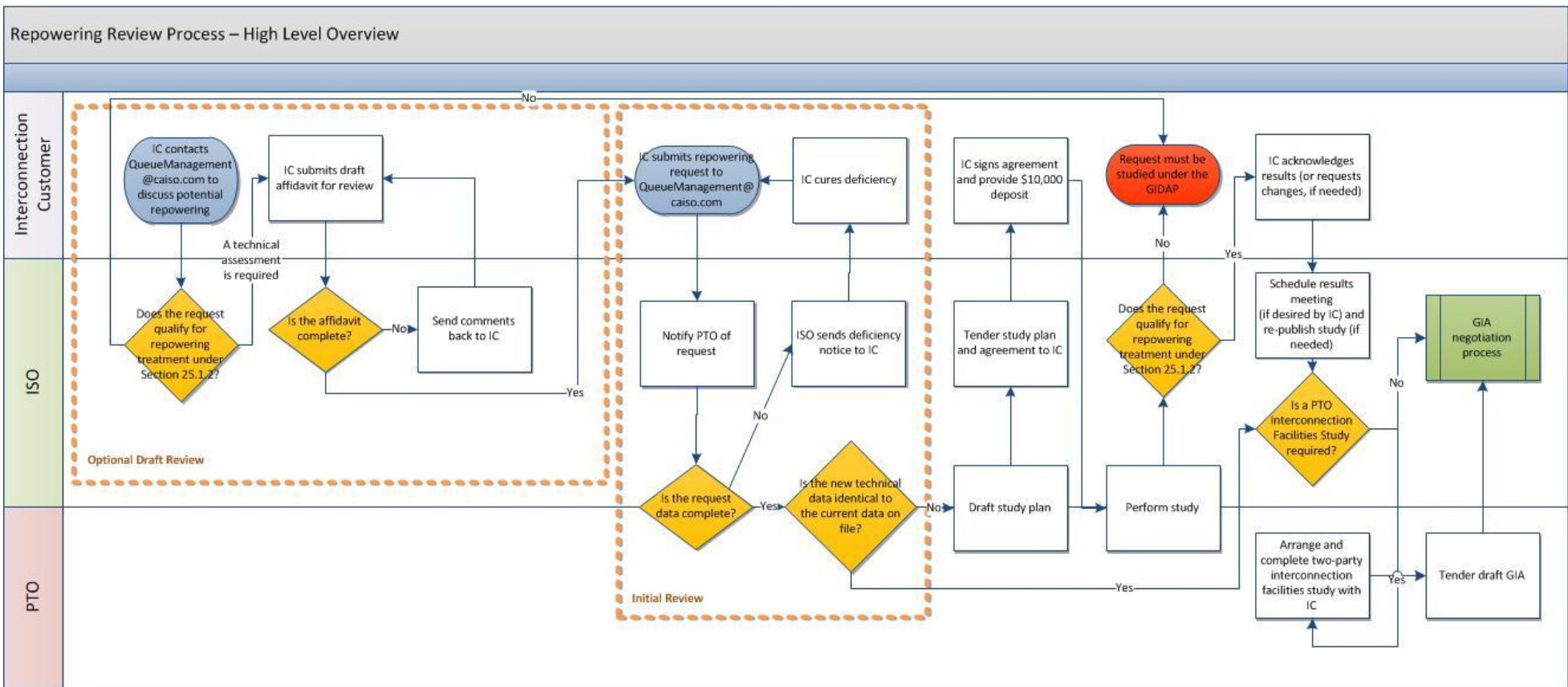
A complete request for repowering must include the following items and information:

- The signed, dated, and notarized affidavit shall be provided to [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com). The notarization must be in jurat form.
- Fully completed Generation Facility Data form as contained in the ISO's pro forma Interconnection Request (ISO Tariff, Appendix DD, Attachment A to Appendix 1) including both PSLF load flow and dynamic models. The load flow model should be provided in GE PSLF .epc format. The dynamic model should be provided in .dyd format using GE PSLF library models that has been approved by WECC for the technology of the Generating Facility. If no WECC approved library model is available for the technology, the Interconnection Customer should use a GE PSLF library model to equivalently and sufficiently representing the Generating Facility. In case the GE PSLF library does not contain a suitable model for the technology of the Generating Facility, a user written \*.p EPCL file may be accepted at the discretion of the CAISO and applicable Participating TO. However, the Interconnection Customer must replace the user written model with the GE library model before its synchronization to the grid or upon the CAISO's notification.
- Generator Characteristic and Scope of Work.
- Identification of the following:
  - The proposed timeline for the repowering.
  - If the project is currently out of service or disconnected, and if so, for how long.
  - Current controlling agreements for the project's transmission facilities.

A graphical representation of the review process is presented on the next page.

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<sup>35</sup> Tariff Section 25.1.2.



### 11.4.1 Optional Draft Review of Affidavit

In order to facilitate the affidavit process, the CAISO encourages Repowering applicants to contact [QueueManagement@caiso.com](mailto:QueueManagement@caiso.com) to discuss their repowering proposal to confirm that the Generating Unit's specific circumstances meet the basic threshold to be considered for repowering,<sup>36</sup> and to submit a draft of the affidavit to ensure that it is complete before it is notarized. Generating Facility dynamic data is not needed for review of the draft affidavit, but a one-line diagram is useful. The CAISO will provide comments back to the repowering applicant within five (5) Business Days after receipt of the draft affidavit.

### 11.4.2 Initial Review

Once the affidavit and the required technical data are received by the CAISO, they are reviewed for completeness. If the application or the affidavit is incomplete, they will be returned to the applicant with an explanation of the deficiencies. The CAISO and Participating TO will provide a list of deficiencies to the repowering applicant within ten (10) Business Days after receipt of the request. The repowering applicant must address these deficiencies and resubmit the application to the CAISO before the CAISO will begin the review and assessment process.

Upon receipt of the complete request for repowering (as defined in Section 12.4 of this BPM), the CAISO and Participating TO will review the technical data to see if it is different from the data already on file with the CAISO for the existing Generating Unit. This initial review will take no more than ten (10) Business Days.

If the CAISO and Participating TO determine that the technical data for the new Generating Unit is identical to the current data on file, the CAISO and Participating TO will consider that the repowering of the Generating Unit meets the criteria for Section 25.1.2 and therefore need not enter the CAISO generator interconnection queue. Even if the unit's total capability and electrical characteristics remain substantially unchanged, an interconnection facilities study performed by the Participating TO may still be required to determine whether the interconnection facilities meet current standards, and if not, whether additional interconnection facilities may be needed to support the interconnection, before the Participating TO can tender the draft GIA.

If the new technical data is different from the data on file with the ISO, a technical assessment will be conducted to verify that the electrical characteristics of the Generating Unit are substantially unchanged. As discussed above, an interconnection facilities study agreement also may be necessary. Because most repowering proposals include a change to the Generating Unit's equipment, a technical assessment will need to be performed in most cases to confirm that total capability and electrical characteristics of the Generating Unit are substantially unchanged.

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<sup>36</sup> As described in section 2.1 of this BPM

### 11.4.3 Technical Assessment

If a technical assessment is required to verify if the electrical characteristics of the Generating Unit are substantially unchanged, the CAISO will work with the Participating TO to draft a study plan for the technical assessment. The assessment plan will indicate:

- The assessment and studies that will need to be completed;
- Study cost estimates;
- Schedule;
- Project and interconnection information;
- Study assumptions; and
- Data provided by the repowering applicant to be used for assessment of the repowered Generating Unit.

The CAISO will forward this plan, along with an assessment (study) agreement to the repowering applicant within ten (10) business days of receiving complete technical data. It is anticipated that the repowering assessment will take approximately ninety (90) calendar days to complete once the CAISO has determined that all informational requirements have been satisfied.

### 11.4.4 Verification Assessment Analysis

To determine if the total capability and/or electrical characteristics of the repowered Generating Unit are substantially unchanged, such assessment may include, but is not limited to, the following analyses:

- Dynamic stability assessment under both no-disturbance and critical contingency conditions;
- Post transient governor power flow analyses under critical contingencies;
- Short circuit duty study;
- For asynchronous units, reactive requirements study;<sup>37</sup>
- An assessment to determine if an interconnection facilities study agreement is needed to determine if existing facilities meet current standards; and
- An examination of net qualifying capacity that will be modeled in the CAISO's generator deliverability assessment.

### 11.4.5 Results

Upon completion of the assessment, a report will be drafted by the CAISO and Participating TO and sent to the repowering applicant for review and discussion. Once the draft assessment report has been finalized, a final report will be prepared and

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<sup>37</sup> If the Generating Unit(s) owner agrees to include reactive power capability in the repowered unit then a separate study would not be required.

sent to all parties. The CAISO will schedule a results meeting within five (5) business days if desired by the repowering applicant.

**Request Meets Repowering Criteria, No Additional Study Needed** - If the assessment concludes that the capability and electrical characteristics of the Generating Unit are substantially unchanged and the interconnection facilities meet current standards and no additional interconnection facilities or modifications to existing facilities are needed to support the interconnection, the Participating TO will tender the GIA to the repowering applicant for the new Generating Facility.

**Request Meets Repowering Criteria, PTO Interconnection Facility Study Needed** - If the assessment concludes that the capability and electrical characteristics of the Generating Unit are substantially unchanged but that an interconnection facilities study is required to determine if additional interconnection facilities are needed to meet current standards, the assessment report will identify such. However, the assessment report is not intended to develop mitigation plans to address any impacts identified, and the repowering applicant will need to enter into an interconnection facilities study agreement with the Participating TO. Once this interconnection facilities study is completed, the Participating TO will tender the GIA to the owner of the Generating Unit incorporating the results from the interconnection facilities study.

**Request Does Not Meet Repowering Criteria** - If the assessment concludes that the capability and electrical characteristics of the Generating Unit have substantially changed, the assessment report will identify such. The assessment report will not identify mitigation plans to address any impacts identified, and the repowering applicant will need to submit the project into the CAISO generation interconnection queue in accordance with the GIDAP set forth in the CAISO tariff. Existing deliverability status may be grandfathered if the repowering applicant has been operating at the total capability requested during the previous three years and the CAISO can verify such operations.

#### **11.4.6 Generation Interconnection Agreement**

The Participating TO will tender the draft GIA within thirty (30) calendar days of the results meeting or confirmation from the repowering applicant that the results meeting is not desired. The most recent tariff appendices will be used as the template for the draft GIA.

### **11.5 Other Requirements**

In the course of repowering the Generating Unit, the repowering applicant will be obliged to meet all current CAISO tariff requirements including reactive power requirements and low voltage ride-through capabilities, as applicable. These requirements are not set aside by a determination that the characteristics of the new generators are substantially unchanged, regardless of whether the original units were meeting then current tariff provisions.